

THE BOSTON Medical and Surgical JOURNAL

VOLUME 192

APRIL 2, 1925

NUMBER 14

ORIGINAL ARTICLES

BACKACHE DUE TO INDUSTRY AND DISEASE*

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It gives me great pleasure, and I am fully conscious of the honor and responsibility of accepting your invitation, to address you today on such an important subject. An attempt will be made to have this address as practical as my ability will permit, for I know of no class of cases in which the problem of diagnosis and treatment is more acute, and the results so often unsatisfactory.

For my part I always approach a patient presenting a back condition, as a sailor approaches an uncharted sea—all caution, the most careful observation, the exercise of the best judgment in correlation of all observed points, and the study of soundings as exemplified by X-rays, to show what is beneath the surface. Without this care one may well run on the rocks, for in every case the channel is different and no charts exist to guide the unwary.

It would seem by this time that the medical profession must have acquired all the necessary knowledge having to do with the diagnosis and treatment of injuries and diseases to the back. However, this condition unfortunately does not exist. We have learned from observation and mistakes, what and what not exists, and what and what not to do in certain cases, but many individual problems still present themselves, and cases cannot be treated by empirical and routine methods with satisfactory results.

In this paper I wish first to call your attention to the effects, local and constitutional, immediate and remote, of injuries to the back, as the result of falls, contusions, sprains or strains, either traumatic or postural. Many of these cases to be referred to are individuals who have been injured in industrial accidents, and I particularly wish to call to your attention also the fact many of these people whose backs are injured in various ways, in and as the result of their occupation, suffer long periods of disability and incapacity.

The necessity of a correct diagnosis in these back lesions following industrial accidents is essential. The accuracy of the diagnosis is essential not only that proper treatment may be instituted and carried out, but that anatomical repair be helped, restoration to function has

tened, and the disability period shortened as much as possible. Precision in diagnosis, however, even under the most favorable conditions is not often obtainable, due to the fact that many cases show no demonstrable bony lesions by X-ray examination, and the impossibility of differentiating muscle and ligamentous tears is evident.

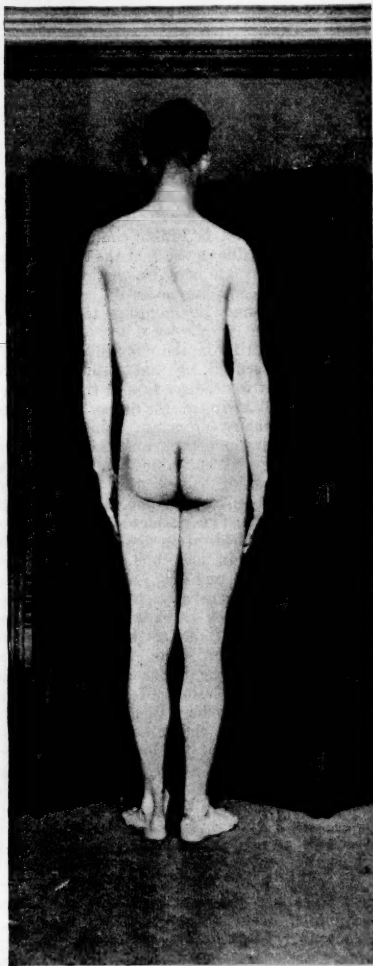
A definite routine in the examination of any back case is essential, so that nothing will be overlooked. It is needless to add that all cases should be wholly stripped, for unless that is done one may miss many important points.

The history is important, and the method by which the injury was sustained is often of great assistance in making a diagnosis. The position the patient was in at the time of the accident should be noted. The patient's description of the pain and its localization are important. The extension of the pain down one or both legs, and its distribution in one leg, should be noted. Sacro-iliac lesions generally show pain referred down the back of the thigh, as well as to any part of the lower leg, due to the involvement of the lumbo-sacral cord, the first and second sacral nerves and the superior gluteal nerve. The pain from the lesions of the lumbo-sacral region, however, may be referred to the dorsum of the foot, first toe, the inner side of the sole and heel, outer side of the lower leg, and occasionally some of the other toes as well as to the dorsum of the foot. Pain, however, down the leg in the lumbo-sacral cases in my experience is not as common as in the cases of sacro-iliac involvement. Inspection of the patient's standing position, the presence or absence of a tilt of the body to one side or the other, muscle spasm, localized pain over one or both sacro-iliac joints, over the lumbo-sacral region, or over a transverse process, is important and helpful to note. Leg raising, standing and lying should be carried out, but always when lying with one hand under the lumbar spine. If there is limitation of leg raising before the lumbar spine begins to move, a sacro-iliac condition should be suspected; coming on later when motion involves the lumbar spine, that area should be the one to be considered.

The causes of injury are most varied, and may be intrinsic or extrinsic, that is, direct or

*Read before the Essex North Medical Society, Haverhill, Mass., January 7, 1925.

indirect injury. An adequate knowledge of the method of injury is most helpful, that is, was the injury direct or indirect, the spine flexed or hyper-extended, a blow, a fall, a lifting strain, and if so what was the position of



PICTURE NO. 1. Case of sciatic scoliosis. Note lateral displacement of trunk to left.

the individual at the time. All this helps in determining not only the anatomical localization of the injury, but the possibility of bone or soft part lesion, as well as the probable duration of the disability.

Another most important factor besides the character of the violence causing the injury is the actual condition of the spine preëxisting the trauma. The age of the patient, of course, has a good deal to do here, in view of the fact that there may be a hypertrophic arthritis, a tuberculosis or even a congenital defect which heretofore has caused no symptoms, but which as a result of the injury became a predominant factor in prolonging the disability long beyond the usual time, and in fact often leads to a permanent disability. The traumatic back injuries to be discussed will be divided into three classes, namely

- (a) Those due to lifting strains.
- (b) Those due to contusions of the back from a fall or by being struck by some object, the injury being only to the soft parts.
- (c) Those due to any accident where there has been bony injury to the vertebral body or one or more of its appendages.

The first class is represented by those cases who injured their backs by lifting strains, generally acquired by trying to carry or lift some object much too heavy for them. Many of these cases have sudden pain in the back when trying to lift heavy objects. They felt, as they report, something snap or give way in their backs, and generally are able to localize the sore spot very accurately. Generally the pain is in the lumbar region. There may be pain and localized tenderness over the low spinal muscles, usually one-sided, and at times the soreness extends around into the flank.

It is difficult to differentiate between muscle and ligamentous tears at first. I believe, however, that ligamentous tears are of longer duration; and that the soreness and tenderness are deeper seated. Ligamentous tears may be located in the region of the sacro-iliac joints, and so may confuse the diagnosis. They do not get well as quickly, and heavy work in the future is apt to produce a recurrence of the soreness and lameness at the same spot.

CLASS II

The conditions causing the injuries in Class II are clear: a fall from varying heights and landing on the back, or by being struck on the back by some object, the injury due to direct violence. Now direct violence may produce many results, such as fracture of the vertebral bodies, or fracture of a transverse process, lamina, a spinous process, rupture of anterior or posterior spinal ligaments, as well even as rupture of the ligamentum nuchae or intra-spinous ligament. Contusions involving both deep and superficial muscles and ligaments are common, and injuries to the tendinous insertions of the spinal muscles and ligaments in the region of the sacrum are frequent. Over-extension or forced hyperextension of the spine may produce injury to the anterior spinal ligaments; while forced flexion may produce not

only a compression fracture but ligamentous rupture as well.

CLASS III

To go on now to the more severe injuries to the spine itself, I should like to discuss the diag-

spines," I believe, have been crush fractures of one or more vertebrae. Erickson¹ calls attention to the effects of certain forms of injury from which the spinal cord is liable to suffer without serious lesion of its protecting column or enveloping membranes, and describes two



X-RAY NO. 2. Shows anteroposterior view of a compression fracture of the 2nd lumbar.

nosis of crush fractures of the vertebrae, including as well those cases which showed fractures of the spinous and transverse processes.

The causes of injury in this group were falls from a height, the patient landing on his back, feet or buttocks. Others received their injury by being struck on the back by falling objects such as derrick booms, bags of flour, automobiles and wagon wheels.

The mechanics of a crush fracture is generally that of forced flexion of the spine, and the lesion is most commonly located at or about the dorso-lumbar junction. The comparative frequency of this type of fracture following injuries to the spine has, I believe, been long overlooked, and many cases which have in the past been called "traumatic spines" or "railroad

conditions, one of which he calls "concussion of the spine"² and the other "spinal anemia." He

¹Concussion of the spine—definition. Indicates a certain state of spinal cord occasioned by external violence, a state that is independent of and usually, but not necessarily, uncomplicated by any obvious lesion of the vertebral column, such as its fracture or dislocation, a condition that is supposed to depend upon a shake or jar received by the cord, in consequence of which its intimate organic structure may be more or less deranged, and by which its functions are certainly greatly disturbed, so that various symptoms indicative of loss or modifications of sensation are immediately or remotely induced. May be due to molecular changes in structure of cord. Four distinct pathological conditions:

- (1) A jar or shake of the cord, disordering, to a greater or less degree, its functions, without any lesion perceptible to the unaided eye.
- (2) Compression of the cord slowly produced by the extravasation of blood.
- (3) Compression of the cord by inflammatory exudations, serum-lymph or pus, within the spinal canal.
- (4) Chronic alteration of the structure of the cord itself as the result of impairment of nutrition, consequent on the occurrence of one or other of the preceding pathological states, but chiefly on the third.

also describes a condition which he calls sacro-dynia, which is an early description, if not the first, of our well-known sacro-iliac strain of today.

A compression fracture of a vertebra is one where the body of the vertebra is crushed or flattened evenly, or more on one side than the

of the different regions of the vertebral column. The elasticity or mobility of the spine depends largely on the size and thickness of the inter-vertebral discs, which act as shock absorbers, and it varies directly with the relative thickness of these discs, so that the most frequent site of injury would be in the cervical and lumbar



X-RAY NO. 3. Shows lateral view of same case (X-ray No. 7) taken two years after original accident.

other, and more often in its anterior portion than the posterior, depending of course on the direction of the application of the crushing force. They generally follow severe violence applied through the long axis of the spine, or while the spine is forcibly flexed. The term "jack-knife" fracture is graphic and probably correct as far as its anatomical application goes.

The frequency of compression fractures of the spine varies directly with the different elasticity

region, where the discs are thicker and the mobility greatest. Fractures of this type occur as a rule only in those portions of the vertebrae which have a supporting function, that is, the bodies. As a rule they are more compressed anteriorly than posteriorly. More than ordinary violence may also lead to a lateral displacement of the spine as a whole at the site of the injury.

The spinal cord, ending as it does at about

the level of the first lumbar vertebra, is apt to be uninjured. Oedema and hemorrhage about it may lead to temporary paralysis from pressure, the symptoms from which usually, however, clear up soon. Massive hemorrhages do not as a rule occur in single crush fractures of a body, but small scattered hemorrhages prob-

to logical and clinical evidence of such power of regeneration being strongly in its favor.

It has been shown that the level of the first lumbar vertebra is the most common site of this type of injury, probably due to the fact that this is the area of greatest mobility of the spine, and the least guarded by bony protection. The

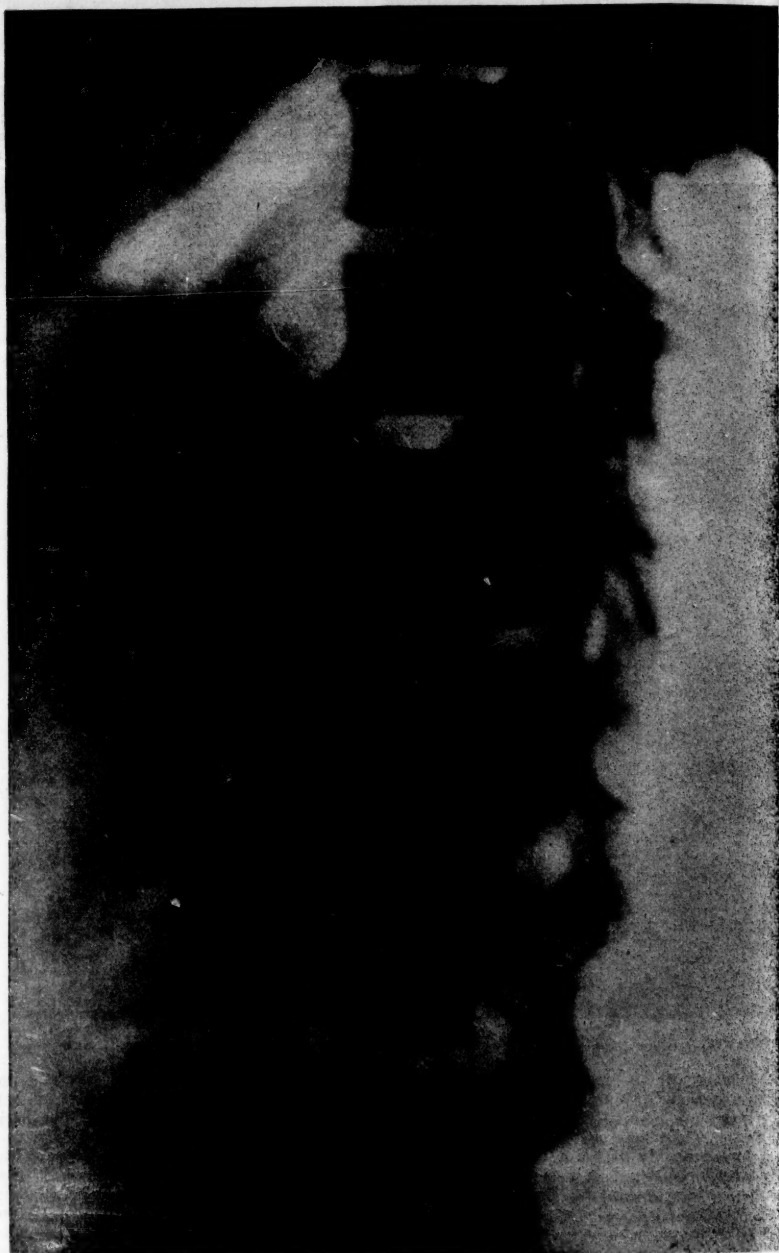


X-RAY NO. 4. Shows fresh fracture of the transverse processes of the 7th, 8th and 9th dorsal vertebrae on the left.

ably do exist, which are not extensive enough to cause serious injury and probably many times never are manifested symptomatically in paralysis. Oedema comes on within a few hours and probably causes a marked intrapial pressure, which unless extensive and associated with cord injury does no permanent damage. In case the cauda equina was crushed or injured, we might reasonably expect a partial regeneration of the nerve roots, the physiological, his-

fractures are not limited to one body alone but may involve others as well as the first lumbar.

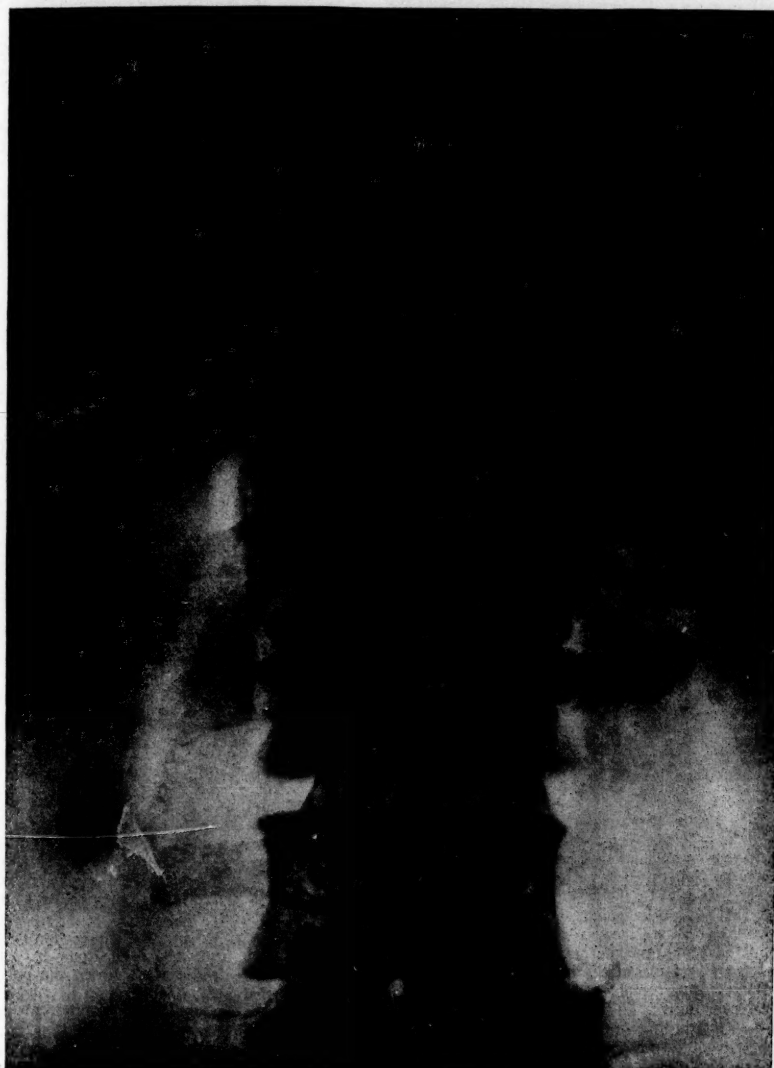
Certain cases show a deformity of the back, a kyphos, or backward bowing, or knuckle, as a result of the bony destruction or collapse of the vertebral body. This knuckle or kyphos is not a constant factor, and may result from the fracture of one or more bodies. It is an important diagnostic point to bear in mind, and means of course only one thing, namely, destruction or



X-RAY NO. 5. Shows lateral view of a compression fracture of the first lumbar.

distortion of the vertebral body. The kyphos may not make its appearance at once following the injury, but may appear and increase some-

The interesting thing about these fracture cases, and probably the reason why so many of them are not diagnosed at first, is that they com-



X-RAY NO. 6. Nardella. Shows anteroposterior view of a compression fracture of the first lumbar.

what during the convalescence, especially when the individual is up and about without proper back support.

plain only of a stiff and painful back, with generally some tenderness over the site of the fracture. Very few of the cases have any symp-

toms due to nerve pressure, manifested as loss of sensation, paralysis of the legs, or incontinence of the bladder and rectum. Practically all cases of this injury complain of a stiff, lame and painful back. They cannot all bend freely, and are much more limited in side bending than in forward bending. Their disability at first may be, but is not always, complete, but as time goes on, they are able to be up and about, and certain ones return to their previous occupation, but many are not able to do so.

In regard to the graver symptoms accompany-

in the interpretation of such X-ray plates. Many of these cases who had crush fractures of the spine went unrecognized, and consequently untreated as such for long periods of time, or were treated as sprained backs and strapped. Many of them as shown by their histories left various hospitals unrecognized in spite of the individual's complaints, and without support for their backs, in some cases as early as eleven days after the injury.

The treatment of course in all these cases should be early and adequate fixation of the



X-RAY NO. 7. Shows fusion of the right sacro-iliac joint in its upper portion.

ing these fractures, certain of the cases showed definite signs of cord injury, manifested by loss of sensation in one or both legs, not complete, and more or less paralysis either early or late. Some of the cases which showed early loss of muscular power recovered it wholly, while others have suffered permanent damage to the cord from pressure of the injured vertebrae, the dislocated intervertebral disc, or pressure myelitis from extra and intradural hemorrhage leading to pulping of the cord. The presence of hypertrophic arthritis in a spine which presents a crush fracture of one or more vertebral bodies, may lead to confusion in the diagnosis in that the vertebral bodies may be so altered by the arthritic disease as to resemble a fracture, and one cannot be too constantly on his guard

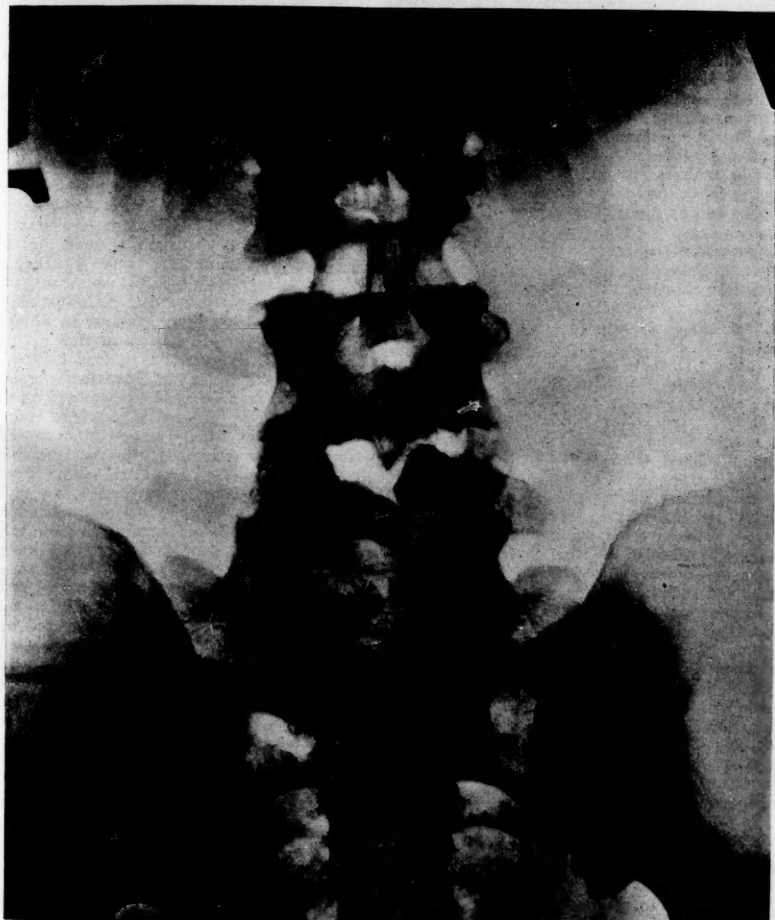
spine, in a plaster jacket at first, and later by a back brace. The whole period of treatment may probably cover several years in the severe cases, or only six months in the milder types. The question of operation on the spine designed to furnish support to the crushed vertebrae has been considered, and has been done in some cases with the view of cutting down the period of convalescence and disability. In the simple crush fracture of one body, I do not personally believe that either much time or much additional fixation is gained in restoring the individual by such operative procedure.

The question of treatment of these cases of compression fractures of the spine without nerve symptoms is one of the greatest importance. Should they be treated as one would

treat any fracture, that is, with a net minimum period of fixation, and then gradual use, or should they have a long period of fixation with plaster jackets and back braces, covering a year or two? Are we fixing them too long, or shall

stricted lead to earlier restoration of usefulness and function? These are the questions we should be able to answer.

My own opinion is that with the simple crush fractures, there has been in the past and still



X-RAY NO. 8. Shows congenital defect of 4th and 5th lumbar. Might be confused with a fractured spine.

we be guided by clinical symptoms of a strained and irritable back, and continue fixation as long as symptoms continue? Will increasing use begun early, say after three or four months, make a back more irritable, aggravate the callous already present, increase the symptoms, and possibly lead to nerve pressure from new callous formation, or will such use properly re-

exists a marked tendency for too long a period of fixation, either with or without operation. As I have said before, I believe they do quite as well without operation, if not better, than with it.

We all know the evils of too long fixation of any joint or part with its consequent atrophy of soft parts and muscle adhesions, and all of us

who deal with fractures have this phase of the subject brought home to us daily. Why should not the same contributing factors be present in too long fixation of a single vertebral body fracture? It is a common experience to have a case come for examination several months after an accident, complaining of only a stiff and painful back, with no deformity, who shows after an X-ray examination a crush fracture. Early fixation by a brace or light jacket, but better still, rest in bed for five or six weeks, fol-

the legs. It is a condition described by Sir Arbuthnot Lane, as very common to coal heavers. An examination of the back in these cases shows usually a marked shelf at the top of the sacrum. The fingers can be placed upon the top of the back edge of the first sacral vertebrae, and the lumbar spine above seems to have been moved forward as a whole. A lateral as well as an anteroposterior X-ray will show this condition clearly.

There is another type of static posture and



X-RAY NO. 9. Shows fracture involving the bodies of the 6th and 7th cervical vertebrae.

lowed by a brace, would probably have averted this subsequent discomfort.

To turn now to the backaches consequent to disease and posture, I would call your attention to several common conditions, as follows:

A condition seen occasionally, and not too rarely not to be worthy of mention, is spondylolisthesis, or a slipping forward of the body of the fifth lumbar vertebrae on the first sacral body, with a tilting forward and downward of the body of the fifth. This condition may be static or traumatic in origin, and usually leads to great discomfort. Certain severe types of this condition may lead to partial paralysis of

backache known as *camptocomia* or bent back, which has recently been described by Hall². It has also been described by Saliba³ under the name of *antalgic spinal distortion*. There is no definite pathology, but the condition is manifestly hysterical usually following trauma or mental shock, and results in the individual going about with the body flexed at the hips, or displaced laterally. Mental suggestion supplemented by back support usually results in an early cure.

Other conditions masked or exaggerated by local trauma or injury have also to be considered and are as follows:

Postural strain. Under this classification we must also include these cases which are called sacro-iliac strains. Static or postural strains are not the result of trauma, but of the constant muscle strain, and over-use superinduced by an habitual bad position, and are the result of definite mechanical and bodily defects. Normally an individual in the upright position when at rest is supposed to carry the weight on his bones, and not on his ligaments or muscles. The center of gravity falls in a line running from the tip of the mastoid through the front of the shoulder, great trochanter, just back of the patella, and about an inch in front of the external malleolus. Any variation from this normal position implies muscle and ligamentous strain and so pain—therefore, when a person habitually stands with the body in a position of poor posture, there is created a lack of normal muscle balance and consequently muscle strain which is translated into pain.

The so-called "carrying posture" is a good example of poor standing position, and is often seen in enteroptotic individuals. The trunk is carried back over the pelvis, the dorsal convexity is increased, and the lumbar spine is hollow or flattened. The abdomen is protuberant or may be scaphoid in type. Backaches are not uncommon in young women with a physiological lateral curve of the spine associated with a round, hollow back and forward shoulders, and is generally easily relieved by adequate exercises and support.

One sees other types in women especially who present marked hollow backs, with a marked increase in the normal inclination of the pelvis. These cases often present tenderness along the back muscles over the sacro-iliac joints, and complain of stiffness and a "wooden feeling" in the legs. This is all due to muscle strain and may be relieved by proper support by corsets—reinforced if necessary by a belt or extra steels, and in many cases relief is afforded by stretching the tight and contracted heel cords which take part in the general muscle hypertonicity. This stretching may be accomplished satisfactorily only by means of the so-called Shaffer stretching shoe.

Many indefinite backaches which fail to clear up under ordinary treatment are relieved at once by raising the heels of the shoes and by the previously mentioned stretching. High heels are not always the curse that they are made out to be, for by raising the heels the body is tipped back and so relieves the strain on the tense back muscles and hamstrings.

Another source of backache often persistent is that due to inequality in the length of the legs. All cases who are examined for backache should have the legs measured, standing and lying, and should also have the trunk displacement noted. A short leg is a frequent and often unrecognized cause of backache, and many cases get early relief by making the short leg longer, or as long as the other one, by means of

a lift on the shoe. Any flat foot, or pronated foot, should be of course corrected likewise.

Rheumatoid Arthritis of the spine—Spondylitis Deformans. This is a condition which has been mentioned before in connection with traumatic injuries to the spine, but its presence independent of trauma is of the greatest importance. It is a chronic inflammatory condition affecting the ligaments and periosteal coverings of the vertebrae and terminating in ankylosis and deformity. It may affect one portion of the spine more than another, but its progress is certain and the result is usually a stiff spine, with the stiffness more marked in the lumbar and dorsal regions than the cervical, although that is not by any means exempt. It is a condition usually seen in laborers and usually secondary to their occupation. The X-rays will show the characteristic bony spurs, overgrowths or liping at the edges of the vertebrae, and the later cases, the typical involvement of the ligaments, bridging the vertebrae together into one solid vertebral rod or column. The condition is not infrequently seen by itself, that is without any other joint being involved.

Inflammatory rheumatism, gonorrhoea, typhoid fever are frequent causes of this condition, besides laborous occupation. In others the etiology is unknown. The treatment is rest, fixation, massage and support, besides the usual general remedies.

Tuberculosis of the spine. Common in children and rather easily diagnosed by the presence of history, spasm, pain, guarded gait, the so-called military gait, the presence of a kyphos. In an adult the history is not as suggestive. There may or may not be a kyphos, but usually is if the vertebral destruction has gone on far enough. There is persistent pain in the back and weakness in the legs, even to beginning paralysis, increased knee jerks, Babinski, and ankle clonus. The iliac fossae should always be examined for the presence of a psoas abscess. The treatment is rest in bed on a frame or in a plaster shell, later an adequate jacket or brace treatment. The prognosis in adults is not as good as that in children. It is not an unusual disease in adults, and its possibilities should not be forgotten.

Osteomyelitis of the spine is not frequent. It may, however, follow after primary osteomyelitic foci or general septic infection. Carcinoma and sarcoma destroy the vertebral bodies in much the same way as tuberculosis. Sarcoma may be primary and I recall having seen one such case. Carcinoma generally is secondary to a primary focus in the uterus, breast or prostate. Occurrence of pain in the back with a kyphosis following the removal of a breast for carcinoma should put one on the right track towards making a diagnosis. Uterine carcinoma may be overlooked, however, but should not be forgotten in searching for a cause. Backache in men may be secondary to prostatic removal even if microscopic examination fails to show malignancy.

It may exist and cause metastasis in the spine with fatal results. All men with persistent backache beyond middle age should have an adequate examination of the prostate.

Sacro-iliac strain. The predilection of the sacro-iliac ligaments or joints to become injured is well known, and generally misinterpreted. The necessity for clearly localizing the anatomical forces and the distribution of pain, with other signs and symptoms is obvious, and an analysis of the method of production is essential to a correct interpretation of the condition, without which one may go far astray. An X-ray is always an essential, even purely on a negative basis.

Simple strains or sprains of this joint may be generally easily relieved by strapping, extending it well around to beyond the anterior superior spine on either side, a large felt pad or folded sheet or pillow slip being placed in the hollow of the back and sacrum. This strapping should be tight, especially between the trochanter and the crest of the ilium. Manipulation with or without an anaesthetic will often reduce at one attempt an early displacement. An old one of long standing which cannot be reduced, takes care of itself by gradual bodily readjustment.

Associated with these back strain and sacro-iliac strains of displacements one often sees sciatica. In fact many low back conditions, especially those of an arthritic nature, are manifested early by a sciatica, more or less severe, and generally clearing up following the adequate treatment of the primary cause. Sciatica by itself is a rare condition.

The distribution of nerve pain in relation to this condition has previously been discussed. Now, Gentlemen, you have had put before you an outline, brief and not wholly comprehensive, of the conditions you may meet in individuals presenting themselves to you for the relief of a backache. Many of these cases you can relieve by simple and appropriate methods. Others will require more extended investigation and treatment, while others, and not by any means a small class, will continue to complain without any known method of examination showing an adequate cause for their complaints. These cases will probably be largely industrial in origin, and will have to be treated as best you can. Psychology, suggestion, physiotherapy, a friendly interest and above all a constant effort to stimulate the individual to make an attempt to do more, without too much disparagement of his complaint, will go a long way towards a cure and restoration to usefulness.

Quite apart from the knowledge and science of medicine in the diagnosis and treatment of certain of these obscure back cases, after a methodical examination has failed to reveal any real cause of their complaint and inability to return to work, one has to depend on a "hunch," much as a lawyer does when picking a jury, all of which presupposes experience, surgical judgment and common sense.

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THE ENDOCRINE ELEMENT IN ARTHRITIS

BY H. K. THOMPSON, M.D.

To discuss the entire range of arthritis and its treatment is a task far beyond the scope of the present paper. The immediate object is to call attention to certain phases which may concern endocrinology, and to show why certain types of arthritis are not necessarily disease entities, but may be symptoms of, or coincident with, an endocrine dysfunction. In any consideration, it becomes of paramount importance to define and classify the several types presenting in the group designated by the general caption, arthritis.

Owing to the great confusion of terms used in this connection, few writers on the subject have a common basis of expression, and even a casual study of the literature is oppressive for this reason.

Among the more commonly used terms are found, arthritis deformans, articular rheumatism, infectious, atrophic and hypertrophic arthritis, rheumatoid and osteoarthritis, proliferative and degenerative arthritis, while other modifications such as polyarticular, nodular, senile, juvenile, trophic, metabolic, progres-

sive and scirrhus, frequently occur.

Many of these groups are identical or merge the one into the other. Following the classification of Goldthwaite, Painter and Osgood¹, the groups here to be considered are those designated respectively as infectious, hypertrophic and atrophic. The classification adopted is the one which seems most practicable both from the clinical and laboratory standpoint. With certain conventional additional designations adopted for purposes of clarity it will be followed in this discussion.

It is almost universally accepted that the greatest number of chronic cases are infectious in origin. A small number are possibly due to exhaustion or continued nervous strain or anxiety. These causes may affect the endocrine balance. In the instances to be considered, a final result may be arthritis.

Some writers assign as the remote cause a derangement in the nervous system. Jones² suggests a "Neuropathic Diathesis" as (1) a fundamental element, drawing a resemblance to many other diseases of nervous origin, citing

the coëxistence of rheumatism and Graves's Disease; and (2) an accidental factor, the presence of a possible source of toxemia, such as oral sepsis, chronic indigestion, gastric ulcer, chronic diarrhea or sore throats.

It may be possible to show that two of the three groups under consideration are possibly endocrine in their immediate origin, or are associated with endocrine aberration. These two groups will be indicated and their coincidence with endocrine derangement discussed. Gonorrheal or tuberculous types have not been included in this study.

West²⁸ in 1886 first called attention to the close relationship of rheumatism and Graves's Disease, and four years later MacKenzie¹² marked its coincidence or antecedence.

Weil and Diamantberger²⁸ in 1891 expressed conviction of a close relationship between Basedow's Disease and the arthritic diathesis.

Since this time many authors have described cases in which affection of the thyroid was secondary to, coincident with, or antecedent to rheumatism. These data together with frequently appearing cases showing an extraordinary correlation of symptoms have attracted attention to the study of the possible endocrine relations of arthritis.

R. L. Jones (l. c.) found 6 out of 14 cases of rheumatism with incomplete Basedow's. G. Deusch⁴ cites a case of hereditary Basedow's with arthritis (deformans) in which the first joint signs appeared at the time of the maximum intensity of thyroid symptoms. Leopold-Levi and de Rothschild¹⁰ demonstrated the existence of four forms of chronic thyroidal rheumatism in 1908, basing their conclusions on therapeutic results, laboratory and clinical observations, and anatomical and pathological findings. "While it is not common to observe in these cases of chronic rheumatism the complete symptomatology of myxedema or of Basedow's Disease, yet there may be found indefinite symptoms which pertain to each of these conditions. These symptoms are presumptive proof of the coëxistence of dysthyroidism and chronic rheumatism."

Remarkable results were also obtained in cases of chronic rheumatism which were given thyroid medication by Lancereaux and Paulsen²⁰.

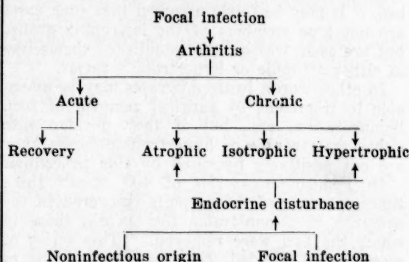
Sergent²⁰ states that there can be no longer any doubt as to the existence of chronic thyroidal rheumatism, or more correctly, rheumatism due to thyroid insufficiency. A case is cited to support the evidence and others benefited by opotherapy are mentioned. This writer considers that the most important fact is the determination of the clinical characteristics by which this type can be distinguished from other types.

Unger²² has described a group which he designates as Chronic Endocrine Polyarthritis Destruens, following a noninfectious insidious course, and affecting women only. It is closely

related to functional anomalies of the generative glands and its picture includes pluriglandular features resembling those in Basedow's, as well as sclerodermal changes, trophic and vasomotor disturbances, and those referable to the autonomic nervous system.

Naturally, all cases of chronic infection do not show evidence of endocrine dysfunction, while on the other hand, joint symptoms are not among the inevitable sequelae of endocrine dysfunction. In a certain percentage, however, there is patently a coincidence of the two elements.

The possible double form of origin of the chronic cases can best be presented in the following schematic arrangement:



The question arises as to whether symptoms of endocrine dysfunction or those of arthritis appear first. The patient's first complaint is usually from the arthritis, although other subjective symptoms of a potentially endocrine origin may have been present previously. Since these cases are not usually examined prior to the appearance of the arthritic symptoms, there is perhaps only slight evidence that the endocrine disturbance clinically precedes.

Robinson¹⁸ cites a case in which a definite attack of "rheumatism" occurred six months after the first sign of Graves's Disease. Other cases have been reported in which symptoms of Graves's Disease have been noted at the height of and frequently antecedent to arthritic symptoms^{20, 24a, 25}.

Were such cases carefully examined prior to the appearance of arthritic symptoms, there would in all probability be found some evidence of endocrine disturbance.

The demonstrated coëxistence of the condition, thyroid dysfunction and chronic arthritis, in the individual, forms the starting point of the present study. The several groups designated in the table above may be considered seriatim.

A. ISOTROPHIC GROUP

The term isotrophic is used to denote chronic infectious arthritis which is not differentiated into either the atrophic or the hypertrophic form.

A case of chronic infectious arthritis, if of sufficiently long duration, usually merges into one of the two latter forms, although it may remain for years a chronic latent infectious process in which no demonstrable bone change takes place.

The group represents the immediate or remote result of focal infection. Its etiology is regarded as definitely bacterial and lines of treatment such as surgical removal of foci, immunization or shock therapy, physiotherapy and medication are fairly established.

It is noteworthy that in a very large number of cases of so-called infectious arthritis, foci are removed without benefit to the patient, or with no other benefit than would be derived from the same amount of time spent in rest in bed. It may be fairly assumed that such cases are not true members of the isotrophic group, but are cases which have established themselves in either atrophic or hypertrophic forms.

In other words, isotrophic cases may be amenable to treatment by surgical removal of foci, immunization, etc., but if they develop into either the atrophic or hypertrophic forms, they are not positively benefited by this procedure.

In Pemberton's series of 400 cases¹⁶ three times as many of the patients recovered in the presence of demonstrable foci as did those in whom the foci were removed. This series of cases is not divided, however, into groups as here studied, and three possible varieties are dealt with under a single heading.

Many writers have remarked⁹ on the large number of arthritides of unknown etiology which go on to chronic invalidism despite attempted elimination of suspected foci.

The natural immunity of an individual may be such that arthritis does not appear as the symptom of a focal infection. The whole system has, however, undergone an attack which may have been overcome; or permanent damage may have been left. In such residua, the endocrine system may be involved.

It has been shown that cirrhotic processes develop in the thyroid as the result of chronic intoxications; and in severe infectious diseases there are inflammatory processes present in the gland.¹ N. Mutch presents a series of cases of chronic infection in which damage to the thyroid is very common, and well defined myxedema or goiters of considerable size were seen in 14%.¹⁴ Excellent examples of rheumatic thyroiditis in the literature³ are illustrative of endocrine results of infectious processes.

In an analysis of 63 cases of exophthalmic goiter, Mouriquand and Boncheut¹⁵ found rheumatism to be an etiological factor in about 25%. Vincent²⁴ observed 156 cases of febrile rheumatism, and noted tumefaction of the thyroid in 86 cases, or 68.3%.

Cases of hypertrophic or atrophic arthritis may have a demonstrable focal infection, but this is in all probability of later development, or is a condition superimposed on a former in-

fection. Should infection of teeth or tonsils be superimposed on a case of arthritis with a concomitant endocrine element, the focus might be removed without benefit to the patient. Here the background of an established and steadily progressive endocrine arthritis would probably be made worse by the added focal infection, but would not be eliminated by the surgical measures unless this focus had been continually active over a long period of time and had been responsible for the initial or primary endocrine invasion.

A case of the isotrophic group may remain latent for years, then manifest itself in the atrophic or hypertrophic form, or in an acute exacerbation, should the general resistance be sufficiently lowered.

Every patient with acute arthritis is potentially an isotrophic case which may over a long period intermittently evince itself through toxic or infectious symptoms in the joint or joints. Such cases show slight fluctuations in temperature, periarticular soreness and thickening with joint stiffness, and may finally resolve into one of the endocrine forms with concomitant glandular symptoms.

There are no bone changes demonstrable by X-Ray in the isotrophic cases other than simple atrophy from disuse. The picture is characterized by joint cloudiness, periarticular capsular thickening, and inflammatory erosions of the cartilage.

The basal metabolic rate in isotrophic cases as a rule exhibit no variation from the normal reading unless there exists a superimposed condition, or an exacerbation of the former acute process. A single illustrative case may be informing.

Case No. 155529.

Miss N—, age 24, entered the hospital May 21, 1924, complaining of pain in the knees, back and shoulders.

Past History: Erysipelas 11 years ago. Appendectomy two years ago. Occasional frontal headaches with some vertigo. Discharging ear for several years. Teeth have been poor and much dentistry done. No tonsillitis or sore throats. Slight dyspnea on exertion. No palpitations. Ankles swollen two years ago during an attack of rheumatism. Gastro Intestinal history negative. Slight leucorrhea for past two years. Catamenia at 15, four days' duration; bears no relation to the severity of the rheumatic symptoms.

Present Illness: Rheumatic pains in all joints for the past two years. Worse during damp weather. Confined to bed two years ago for seven weeks with pain and swelling of the hands and feet. Since then pain has shifted to the knees, shoulders and back, varying in intensity. Two months ago knees were so swollen and painful that the patient could neither stand nor sit. Condition somewhat improved since. At

present there is very little pain in any of the joints.

Physical Examination: Left ear discharging, serous in character. Nose large and flat. No obstruction or discharge. Teeth show numerous fillings and cavities. One dead tooth. Tonsils present; small and somewhat fibrosed. Breasts unusually small. Heart shows a slight systolic murmur at apex, poorly transmitted to axilla. Extremities: No tenderness in joints, or limitation of motion. Right knee slightly larger than left. No signs of inflammation or fluid. No edema of ankles.

Blood and urine examinations not remarkable. Sweat is acid in reaction. X-Ray: No bone pathology found. Periapical infection of right upper diaphysis demonstrated. Basal metabolism, Harris-Benedict, +7, DuBois +2, Mean +5, or within normal limits.

This case shows the active focus as a periapical infection, probably the sole causative agent in the arthritis. Although the condition has persisted for two years, there is no bone change, nor manifestation of endocrine derangement. The case has not differentiated into either the atrophic or the hypertrophic type.

B. ATROPHIC GROUP

This group corresponds closely to the so-called Rheumatoid Arthritis, and has many points which would seem to characterize it as a separate disease entity.

It is the most common form and usually found in women. Patients are apt to be of the viscerotopic, slender and nervous type. They are subject to intestinal stasis, with resultant constipation and colitis, symptoms which are relieved by dietary treatment and colonic irrigations.

The skin is likely to be dry, shiny and polished. Vasomotor phenomena are common and frequently observed long before there is any evidence of disease by X-Ray. Nervous strain and worry often precede the first symptoms.

Pain does not usually appear early, and may be absent until after joint enlargement appears. Chronic fatigue is common. The temperature is often subnormal. Depression and lassitude are common occurrences. Cases are worse during catamenia. Blood pressure is low, appetite poor, and there may be general evidences of malnutrition, although later in the disease patients become unaccountably fat. That the saliva turns blue litmus red is a most constant occurrence²¹. Removal of suspected foci brings only disappointment.

The small joints show early widening with soft tissue swelling. The finger may be shortened by destruction of the underlying bone and cartilage, deformity resulting.

The pathological changes of the joints have been minutely reported by Goldthwaite, Painter and Osgood². Particularly of note are the endarteritic changes with lessened blood supply. There is replacement of cartilage by fibrous tis-

sue. Noninflammatory erosion, bone atrophy and ankylosis, is the final result. "The process seems to start in the bone and destroy the cartilage from below the joint, as opposed to infectious arthritis which begins in the joint"²¹.

In seeking a representative illustrative case so many variations from the accepted type were encountered, coupled with the incomplete character of the available records, that it was deemed advisable to omit a history from this present preliminary paper.

That a derangement in calcium metabolism is a potent factor in this condition is probable. Paradoxically, the women of this group are markedly improved during gestation, during which the demand for lime salts is increased and the level of metabolism progressively increases in moderate degree.*

Swaim²¹ points out that a simple explanation of this improvement is that the enlarged uterus provides perfect support to the low viscera, and that metabolism is better than at any other time. After delivery the sudden withdrawal of this support makes the bone physiology correspondingly worse.

Writers have noted the vasomotor types in arthritis and some have sought other explanations than infective foci as causal agents. MacAlister¹¹ discusses this point and mentions perversion of the thyroid, calling attention to the frequency of coldness and numbness of the extremities and other symptoms of Raymond's Disease as constituting the initial symptoms of rheumatoid arthritis (The vasomotor phenomena of the atrophic group).

C. HYPERTROPHIC GROUP

The third group corresponds to the Degenerative type of Nichols¹² and the Osteoarthritis of English writers. In contrast to the atrophic type it is found later in life and is sometimes monarticular. Atrophic arthritis is rarely monarticular.

Hypertrophic changes are frequently found to occur physiologically with advancing age, and mostly in individuals of the heavy anatomic type. These changes may be without subjective or sometimes without objective symptoms.

The type in the hypertrophic group is marked by sluggish, thick, heavy-boned individuals having large high stomachs, long small intestines and big caliber large intestines. It is the so-called "Herbivorous" type of Bryant³, with arteriosclerosis and high blood pressure frequently present.

The onset is, as a rule, painless; there may only be joint pain through mechanical irritation of the spurs. Vasomotor phenomena are absent.

Osteoporosis frequently seen in these cases is usually secondary, and is probably the result of disuse.

*The absolute increase, allowing for weight changes, has been shown by Rowe to be of the order of +0.5% per week.

Most remarkable are the signs of hypothyroidism found in this group. Patients tend to become overweight, hair and skin are dry, finger nails brittle, pulse is slow and full, blood pressure often decreased, and mind less active. There is decreased digestive and muscular activity, and basal metabolism is almost invariably below normal.

Many of these cases begin to grow rapidly worse after menopause. Not infrequently the history of discomfort will date from this time. During menses little or no effect is produced, another differentiation from the atrophic cases in which symptoms are worse during catamenia.

It has been said that members of this group possess a hypertrophic diathesis. They show an inability properly to disperse lime salts. Since metabolism in this type is usually subnormal, a relationship is suggested to glandular hypofunction. It is possible that abnormal calcium metabolism may be found to be a definite factor in this group.

Soft tissue swelling is practically absent in the hypertrophic group. Exostoses appear at the margins of the cartilage following the line of the capsule. Erosions of the joint membranes, if present, appear to be mechanical, differing in this respect from those found in the infectious and atrophic types. There are no atrophic spots in the bone substance; if anything, the bone is more solid than normal.

Case 140595.

Mrs. R., age 55, entered the hospital September 11, 1922, complaining of pain in the back, thigh and knees,—worse on motion. She had suffered with this pain in varying intensities for the past 16 years. She entered the hospital for treatment and was referred to the Orthopedic Service. She gave the characteristic history and findings of a hypertrophic case. About 12 years ago she was X-Rayed and was told that she had some slight growths on her spine which caused the pain of which she complained.

As is common in this group of cases, the patient was of the heavy anatomic type with tendency to sluggishness, overweight and slow pulse. Another characteristic point,—the hypertrophic bone changes appear to have been well advanced before she complained of symptoms, and these symptoms began or grew worse after menopause.

The patient was confined to bed for intervals after the first appearance of arthritic symptoms. She continually gained in weight and observed that her skin was becoming quite dry and that her hair was falling out. She complained of weakness and general debility.

She had been diagnosed severally as pernicious anemia, myocarditis, and Bright's Disease.

Thyroid medication was undertaken for several years, but irregularly, and with the symptoms of which she complained persisting inter-

mittently. Her weight, however, was at one time reduced from 208 to 150 lbs.

At the time of admission to the hospital, Basal Metabolism determination was made September 22, 1922. The weight was 200 lbs., pulse average 91, blood pressure 172 systolic, 120 diastolic. Calculated values under satisfactory conditions, —Harris Benedict, —36%; Du Bois —38%, Mean —37%.

Thyroid gland was given, 2 gr. per day for one week. At the end of this time some clinical improvement was noted. The patient was then sent home with directions to take 3 gr. per day for another week.

An examination made on October 3 (conditions satisfactory), showed an increase in the metabolic rate to —18% from a previous hypofunction of almost double that amount. The pulse rate was increased to 104, and blood pressure diminished, —138 systolic, 90 diastolic. The earlier blood pressure was somewhat anomalous for such a case, as was the slightly rapid pulse.

In conversation the patient stated that the back and leg condition had not improved materially. On the other hand, there was a marked improvement in her appearance and the skin of the face had lost much of its harshness.

Thyroid medication of 3 gr. per day was prescribed for two more weeks. The patient returned for observation on October 20, 1922. Treatment had been irregular and the patient lost as the result. The pulse was 86, blood pressure 148/106. Weight dropped to 193. Metabolic Rate: Mean average, —27%.

Medication of three grains per day continued and on November 3, 1922, further observations showed pulse 83, blood pressure 146/198, and the mean determination of —19%, the patient showing definite clinical improvement.

Continuous observation was interrupted by the patient's removal to another state, but a communication in March, 1924, stated that her general condition was excellent.

The items of interest which are extracted in this case with little other than clinical data, show the coincidence of symptoms due to arthritis and thyroid insufficiency.

GENERAL DISCUSSION

As has been shown, cases of chronic arthritis divide themselves into three groups, although lines of differentiation are not clearly marked and many transition types occur.

The value of differentiating these three types is obvious when one considers that the therapeutics of election is sharply differentiated.

The isotrophic group should include these cases of infectious origin which show no other metabolic change than that due to an active focus if such be present.

In the atrophic group the subnormal temperature, easy fatigability, late and unaccountable gain in weight, low blood pressure, etc., directs the attention to endocrine study.

A number of cases of thyroid hyperfunction studied show arthritic symptoms referable to those of the atrophic group. Many of these cases are seen to have the slender skeleton and almost pointed phalanges which are described by Revilloid¹⁷ as characteristic of long-standing cases of Basedow's Disease occurring in growing individuals.

The longest history cited by Falta⁹ to illustrate a typical case of Basedow's, gives the following symptoms which can be recognized as characteristic of cases in the atrophic group: "Menses accompanied with severe pains, especially headache (later) rheumatoid pains in the extremities, lassitude, psychic irritability, watery diarrhea, sweats and pain in the calves."

That the atrophic cases are markedly worse during catamenia may have some bearing on their etiology.

In the *hypertrophic* group the slow pulse with increased blood pressure, hair, fingernail, and skin characteristics, with general lowered body metabolism, place these cases potentially among those of glandular hypofunction. A possible substantiation occurs when patients respond satisfactorily to the exhibition of thyroid gland.

This preliminary report is based upon a short series of cases studied in reference to metabolic rate at the Evans Memorial Hospital. Sufficient data has not been gathered on all these cases to warrant the inclusion in this paper of any extended statement of the results thus far obtained. It may be permissible to mention that a normal basal rate was observed in 50 cases out of the first 100 unclassified arthritides examined. A total of 145 determinations were made, of which 76 fell within the conventional so-called normal limits. Observed values were compared both with the DuBois and Harris-Benedict standards and the mean of the two taken. On this basis 38% of this series fell below normal, while 12% were above normal. Of the cases whose determinations fell below normal and whose diagnosis was confirmed, 77% were cases of hypertrophic arthritis.

A striking aid to grouping in these cases is the placing of the anatomic type of the individual. Just as tendencies, immunities, etc., characterize different races, so susceptibilities vary in anatomic types. We come more and more to estimate the value of these aids, and anthropometric data have opened a new field for application in health control.

As illustrative of this, conclusions drawn from examinations of a million men in our Army Mobilization Camps²³ are as follows:—

Tall, small-chested men who are underweight are likely to be attacked with pulmonary tuberculosis and all kinds of disease of the heart. They are especially prone to be afflicted with varicocele. Men below the average stature and slightly below weight are predisposed to inguinal hernia. Those of moderate stature, but very heavy, are likely to have flatfoot. Tall,

heavy and large-chested men are predisposed to varicose veins.

Men of low weight and low stature are apt to have refractive trouble with their eyes. Those of low stature and abnormally low weight are predisposed to asthma Men who are short, underweight, and small-chested are very likely to have deficient and diseased teeth and possibly many congenital defects.

When applied to arthritis, a phase of the study is brought out which has hardly been considered. Although all gradations and intermediate types are met, the placing of the anatomic type is a likely aid to diagnosis, and should therefore be considered of clinical value.

Mixed types such as that indicated by Ueber (l. c.) are not uncommon. In fact, the exception is the pure type without findings touching on or making part of another group.

Borderline cases which are practically indeterminate are found which may require repeated examinations and determinations before grouping is possible. We must admit of mixed and intermediate types from our present available data. These will in all probability later differentiate into either the atrophic or the hypertrophic form.

A difficulty is met in the interpretation of vital function tests in cases which are studied in the so-called Transition Period. For example, it is found in many instances that before the final evidence of thyroid insufficiency there appear symptoms of an overactivity, giving a contradictory picture.

SUMMARY

1. Cases of chronic arthritis have been grouped into three classes:—

- a. Isotrophic, or undifferentiated.
- b. Atrophic.
- c. Hypertrophic.

2. Cases of chronic arthritis of the isotrophic group represent the primary residua of infective foci. They may remain as such without bone changes, or may develop changes of the hypertrophic or possibly of the atrophic type, in which event a disordered endocrine system may be demonstrable either as the immediate causal agent or as a complementary phenomenon.

3. The cases of the atrophic group offer some evidence of endocrine dysfunction. In many, features associated with hyper- or dysthyroidism present, while in a few, other endocrine foci seem more probable.

4. Cases showing changes of the hypertrophic type present evidence of endocrine hypofunction, seemingly of the thyroid, with low metabolic rate, slow pulse, low blood pressure and generally lowered tone. These are usually amenable to gland therapy.

I am indebted to Dr. Loring T. Swaim for his kindly criticism and suggestion in the pursuit of this study; to Dr. A. G. Howard for his coöperation and clinical advice; and to Dr.

A. W. Rowe for his interest and guidance in the preparation of this work.

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THE TREATMENT OF CERTAIN PULMONARY CONDITIONS*

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It is my purpose to speak very briefly of the treatment of three pulmonary conditions: the simple non-tubercular pulmonary abscess, bronchiectasis, and advanced unilateral tuberculosis.

By simple pulmonary abscess is meant a condition in which there is a breaking down of the parenchyma of the lung, X-ray picture showing a definite cavity with a fluid level in it.

These cases should have the opportunity of being cured by medical treatment, before surgery is considered. Rest in bed, fresh air, good food, and postural drainage should be insisted upon. Just how long this treatment should be kept up is a matter of considerable difference of opinion. Some men take the attitude that no case should be operated upon until four months have elapsed from the beginning of the disease. I do not feel that any such definite rule can be laid down. Each case must be decided upon its own merits. My experience has led me to believe that the case that does not show marked progress during the first four weeks after the diagnosis has been made, will seldom be cured without surgery. How many cases will be cured by medical treatment is also a question in which there is a difference of opinion. It seems safe to say that somewhere between 10% and 30% may be expected to be cured by this treatment, with the number of actual cures tending more toward the 10% than the 30%.

Artificial pneumothorax will cure a very limited number of cases, especially if this is instituted very early. Little can be accomplished if this is not undertaken until the lung and the costal pleura are adherent: therefore

a collapse of the lung must be brought about early, before this takes place. In certain instances in which there are firm adhesions present, a partial collapse of the lung may be of temporary benefit. An especially sick patient may be improved in that the distressing cough and the foul odor of the sputum are diminished, so that some rest may be obtained and nourishment taken, thereby improving the condition so that operation may be performed. A careful search of the literature has failed to reveal any considerable number of cases cured by this method. Once in a lifetime there is a "freak" case that has been cured by one injection of air. We have had one such case. The danger of tearing an adhesion, and thereby opening an abscess situated in the periphery of the lung and producing an empyema, should be remembered.

Everyone is familiar with the wonderful work carried on by Chevalier Jackson and his associates in Philadelphia. It is my opinion that few cases of simple lung abscess are cured by bronchoscopic treatment. There have been a few. It is reasonable to suppose that when this method is undertaken early in the course of the disease the result will be better than when started later. The method consists of frequent bronchoscopic examinations during which any stricture or narrowing of the bronchus leading to the abscess is dilated, the abscess emptied, and either irrigated or injected with some mild solution. Foreign bodies that lodge in the bronchus produce a bronchiectasis, and seldom a lung abscess at first. If these are removed early the suppurative condition quickly subsides. On the other hand, if allowed to remain for many months or years, there will be

*Read before the Trudeau Society, January 13, 1925, at Boston, Mass.

produced not only a bronchiectasis, but as the infection gets beyond the walls of the bronchus a pyemia of the lobe of the lung will be produced. When this condition has been established the removal of the foreign body will no longer cure the condition.

When these methods have failed, the patient should be given the benefit of surgery, but never ask the surgeon to operate as an emergency. There is always a golden time in which to do the operation. If this is done as an emergency, the result will usually be to hasten death. While satisfactory progress is being made there is no reason to consider surgery, but if at any time this is not satisfactory, operation should be strongly considered. The danger of such complication as brain abscess, meningitis, septice-mia, and extension of the process in the lung must be well considered in postponing operation. Also it must be remembered that not infrequently, a simple abscess may change its character completely and become a bronchiectasis associated with many small abscesses in the parenchyma of the lung.

The results of surgery will interest you more than the various techniques of operation, and the trials and tribulations of the surgeon while performing them.

When the abscess is situated in the periphery of the lung it is much more favorable than when situated close to the hilum. Cases operated upon during the first three or four months have a better chance for cure and a shorter convalescence than when operated upon after many months or years. When the operation is done other than as an emergency, the mortality is not over 15%, from 60-70% may be expected to be cured or permanently improved. In a few of the long-standing chronic cases it may be necessary to establish a permanent fistula, and it is these that are classified as permanently improved.

In speaking of bronchiectasis I refer only to those cases in which the disease is limited to one lobe of the lung. By this term is meant the true bronchiectasis in which the disease has existed for many years and in which there is a marked dilatation of a limited part of the bronchial tree. The dilatation of the bronchi may produce numerous abscess cavities which can well hold half a pint of pus. Also is included in this classification cases in which there is a pyemia of one lobe of the lung. The pus cavities varying in size from 1 or 2 cm. in diameter to those of microscopical dimensions. This condition being accompanied by some dilatation of the bronchial tree leading to it.

Surgery is the only method of treatment that offers any chance of cure. It may be divided into the palliative operations and the radical ones. The palliative ones are making an attempt to improve the patient's condition, realizing that a cure will probably not be brought about. These consist of draining the bronchus when there is a large dilatation with a pool of

pus in it, or draining any good-sized abscess in the lung itself. It can readily be understood that by draining these, although the patient's condition may be improved, there is little chance of cure as there will be many abscesses left behind that are not drained as they do not communicate with the one that has been drained. An extrapleural collapsing operation may be done, in which a partial collapse of the lung is brought about by excising sections of the ribs overlying the diseased area. Following this the patient's condition is generally much improved, in that the fever subsides, and the cough and foul odor of the sputum is much diminished but never entirely ceases, and a real cure is not produced. In certain of these cases, the diseased lower lobe, for example, may be found at operation to be a dark blue, hard one, much smaller than normal and contracted down to perhaps one-half or one-third of its normal size. The upper lobe is found to be much larger than normal, and frequently comes between the diseased lobe and the chest wall. In these cases it would be absurd to think that a collapsing operation would be of any benefit. A combination of both these operations is sometimes of great value. When this is undertaken the collapsing operation should be performed first.

The only cure of this condition is the actual removal of the diseased portion of the lung. In the operation of lobectomy, when the lobe of the lung is amputated, the mortality has been almost prohibitive. Although a number of successful cases have been reported, yet some of the cases that have survived the operation have not been cured. The mortality is largely due to infection. In amputating a lobe the stump left behind is septic, so infection of the pleural cavity is bound to take place. Other factors, such as shock and hemorrhage, have aided the mortality.

Graham, of St. Louis, was the first surgeon to remove the diseased portion of the lung by means of cautery. This being done in several stages. The results have been excellent. Although he has never had any alarming secondary hemorrhages, yet this is a very real danger to this procedure. Out of about 20 cases his mortality has been 20%, with cures in the patients that have survived the operation. These results are very striking when compared with a mortality ranging from 60% to 100% in the other method. I have only done three cases by Graham's method with a perfect result in one, a fatal secondary hemorrhage at the end of two weeks in one, and the third case is doing well, but still under treatment.

It may be a presumption on my part to suggest to this eminent body of pulmonary specialists, what cases of tuberculosis of the lung should be submitted to operation. However, I believe operation is indicated in those cases of advanced unilateral tuberculosis in which sanatorium treatment and artificial pneumothorax

have failed. It may be impossible to produce an artificial pneumothorax on account of the lung being adherent to the costal-pleura, or the pneumothorax created may only be a partial one, and in both these conditions I believe operation is indicated. Unfortunately operation has been considered only as a last resort, and patients with large cavities and having had repeated hemorrhages are poor risks. Strangely enough even these have many times withstood the operation in a surprising manner. Patients over 45 or 50 years of age are poor risks. Operations are especially indicated in lesions of the lower lobe, also in recurrent severe hemoptyses when an artificial pneumothorax cannot be produced. It must be very rare that advanced disease exists in one lung and none in the other. If there is disease in the so-called "good" lung it must be of very limited extent, confined to the apex, and quiescent, if surgery is to be undertaken. An active process situated in the lower lobe or about the hilum of the "good lung" contraindicates operation. The condition of the heart must be investigated, in order to determine whether or not it will stand operation. Tuberculosis of the larynx does not seem to be any contraindication for operation, whereas tuberculosis of the kidneys or intestines is a contraindication, according to European surgeons, but American surgeons are not so sure of this.

Sauerbruch's posterior thoracoplasty to bring about the collapse of the lung is the accepted operation. In this, sections of ribs from the first to the eleventh are removed. It is a matter of difference of opinion whether or not the operation should be done under a general anesthetic or under a local one, whether or not it should be done in one stage or two, whether or not it is always necessary to section the first rib, and whether or not in all cases all the ribs should be removed. No definite rules can be

laid down. I prefer to decide each case on its merits. So far, in my limited experience, local anesthesia has been satisfactory. However, deaths have been reported from the use of a large amount of novocain. When a patient could obviously stand a one-stage operation, it has been done. When it seemed questionable to do this, the two-stage technique has been used. It seems reasonable to me that in certain cases it may not be necessary to section the first rib but on the other hand many surgeons believe that the success of the operation depends on this being done.

Archibald's Apicolysis operation may benefit cases in which there is an abscess cavity at the apex. It may also be of benefit combined with the posterior thoracoplasty.

The general feeling with regard to paralyzing half of the diaphragm by the removal of the phrenic nerve is that a temporary improvement may be brought about. European surgeons seem to be more favorably impressed with the procedure than American surgeons.

John Alexander (*American Journal of American Scientists*, July, August, September and October, 1924) has collected 1,024 cases, mostly those of European surgeons. The results are roughly as follows:

One-third have been cured, in that they are free from any symptoms of tuberculosis activity for at least one and one-half years, no sputum or none containing tubercle bacilli, and are able to do a whole day or a part day's work. One-third have been improved or considerably improved, and finally the remaining third is made up of those cases in which there was no improvement or made worse by the operation, and the patients still under treatment or not traced.

The results by American surgeons are very similar to those of European surgeons. The immediate mortality following operation is not over 10%.

A CASE OF COMPLETE DISABILITY OF THE HAND BY RELAXED ARTICULATION OF THE FIRST METACARPUS AND TRAPEZIUM, AND SLIPPING OF THE TENDON AND EXTENSOR BREVIS POLLICIS. POST-OPERATIVE RESULT

BY LOUIS A. O. GODDU, P.H.G., M.D., BOSTON, MASS.

DECEMBER 1921 patient injured right wrist. X-rays taken showed no definite fractured area, had plaster paris cast put on by local M.D., nothing definite being shown by the X-ray. Two weeks later plaster was taken off and patient had free motion. X-rays taken at this time did not show anything abnormal in the wrist, the patient's disability consisted that if she was carrying tray with food on it, or tray of any sort, in fact anything that required steadiness, suddenly she would have a sharp pain in the region of lower end of radius and first metacarpal, thumb would give away and

tray would drop, this disability continued until the patient was absolutely uncertain when she would hold anything, or whether she would drop it.

Subjective examination showed there was no thickening around lower end of radius or trapezium, or the first metacarpal, but the patient would seem to have a laxity between the articulation of the first metacarpal with the trapezium, and one would at times feel a distinct snapping when she would abduct the thumb. Under the conditions it was absolutely essential she should have a thumb she could depend up-

on in her work, this patient was in training for a nurse, and this disability would handicap her quite a good deal.

Clinical diagnosis seemed to be a possibility of a laxity between the first metacarpal and the trapezium, and likewise that there was a slipping out of the groove of the extensor brevis pollicis, and two lines of treatment were laid out, either an apparatus to fix this area or an exploratory operation. Patient elected to have operation.

June 12, 1922, incision was made along the wrist just along the radial articulation, incision made in this region so that the scar would not appear on the hand, dissection carried down to the articulation of trapezium and first metacarpal, the groove in the lower end of radius through which the extensor brevis pollicis was easily made out, it apparently seemed shallow, therefore the articulating cartilage was removed from the first metacarpal and the trapezium, and also the tendon of the extensor brevis polli-

cis was lifted up from the cartilage, the groove was cut just under with a curved chisel and lifted up, then with the same chisel a wedge-shaped piece of bone in the same channel was removed and this cartilage was forced in this deepened area fitting very nicely. Tendon was then drawn back and with fascia thrown over was sewn in place. Seven days later stitches were removed, wound was clean. On the 26th or two weeks after operation all motions were free, patient felt a little numbness in the upper part of incision, but nothing more definite. Patient made an attempt to snap tendon or the joint at this time, but she could not.

Nov. 19, 1923, examination showed scar had practically disappeared, having no disability and no recurrence of symptoms. During this interval since the operation patient has been though her training in the operating room as surgical nurse, and has since this writing graduated, and last examination which was in August 1924 patient has normal strength, and has felt no symptoms since the operation.

THE ABDOMINAL CRISES OF MIGRAINE

BY J. ARTHUR BUCHANAN, M.D., M.S., BROOKLYN, N. Y.

THE abdominal crises of migraine are infrequently met in medical practise. Familiarity with this uncommon condition is requisite, otherwise an occasional ill advised operation is performed.

During my residence on the Mayo Foundation, I encountered in my own experience or collected from the files of The Clinic the records of seven patients whose troubles were only explainable by interpreting their seizures as the expression of the abdominal manifestations of migraine. I have recently seen two more patients, whose histories are clear, and their lives unmodified by extraneous factors, such as nervous exhaustion and many operations.

Case 1. M. C., aged 13 years, male, was first seen on June 12, 1922, because of attacks of abdominal pain with headache. The father, mother, and one brother were living and well. The father had had since early life periodic attacks of severe unilateral headaches, usually temporal, which appeared first on one side and then on the other. The attacks were associated with prolonged vomiting. The paternal grandfather had had headaches with vomiting. The past medical history was negative except for an appendectomy for the attacks of which the patient still complained. In the general examination the patient was found to be suffering from a chronic antrum infection. The general physical examination showed the boy to be fifteen pounds underweight, but otherwise there were no physical abnormalities. The blood count, Wassermann reaction on the blood serum, and urine analysis were negative. The history began when the boy

was six years of age with periodic attacks of severe abdominal pain, which lasted a half to one hour. The abdominal pain was followed by severe headache and vomiting. The entire attacks lasted from a few hours to one day. As the years went on the attacks became quite frequent so that at the time of the examination they were occurring once or twice each month. The headache would last from one to two days, whereas the abdominal pain usually lasted about one hour. It was described as being deep seated in the umbilical region, and was tearing, boring in character. During each attack he had been given vigorous catharsis, and kept on an almost starvation diet for a week afterward. The attacks were considered as the expression of food poisoning. As his weight and vitality decreased, the attacks became more frequent, so that a vicious circle was established. I have seen the boy many times during the last two years, and the attacks are still occurring, but with much less degree of frequency, as his general strength has improved on a full diet, and plenty of rest. During the attack he goes to bed; rests until the greatest severity is over, and then goes on about the usual routine of his life. The condition is incurable, and perfectly harmless, except for its temporary inconvenience. More harm can be done by treating such patients, than by allowing a perfectly natural phenomenon to present itself as it sees fit; otherwise the patient's life may be reduced to a state of misery by medication and diets, which are valueless.

Case 2. C. L., aged 8 years, male, first came under observation on Sept. 20, 1922, because of

attacks of abdominal pain followed by headaches. The father was living, and had been subject to recurring headaches with vomiting since boyhood. The mother died from puerperal sepsis. There were three sisters and brothers living and well. The attacks began when the child was four years of age. He would cry with abdominal pain, and then complain of headache for several hours, or perhaps appear unwell all day. As he grew older, he would complain of pain in mid-abdomen. In about fifteen minutes he would complain of seeing bright rotating bodies before the eyes. As soon as these appeared the abdominal pain would cease. The bright lights would revolve for fifteen minutes, when he would be seized with violent pains in one or the other temporal region. The head pains would be followed in a half hour or longer, or sometimes not at all, by severe vomiting, which would continue half a day, or until the child fell into a sound sleep. The general health was good, and between attacks he was perfectly well. The attacks occurred from once a month to once in two or perhaps three months. The general physical examination, urine analysis, blood count, and Wassermann reaction on the blood serum were all negative. The boy continues to have the attacks at this time, but his general health is good.

COMMENT

The first patient has been operated on once, and the second has so far escaped operation, but it is reasonable to assume that the second child will eventually lose his appendix, and not unreasonable to assume that both will have a few operations in the course of years. It is hard for anyone to remain stable when he has a condition which recurs and is associated with pain. Practically all people seek relief from such conditions, if at all feasible, through an operation. The end results I have reported elsewhere².

Migraine is a biologic character occurring in man, and is transmitted according to the laws of Mendel³. The salient features of the character are paroxysmal attacks of pain, usually located in the head, either unilateral or bilateral, but occurring also in the abdomen and associated with nausea, vomiting, psychic and visual disturbances, and many vague somatic sensations. One or all of the sensations may occur in an attack. The affection starts in early life, and as a rule terminates during the fourth decade.

The abdominal crises of migraine are rare, but if sought for will be found. The cephalic type of migraine is not common, and it is unwise to consider every headache the expression of migraine. It is to be diagnosed only after all other types have been carefully considered. There are some cases, however, so typical that no differential diagnosis is necessary. Indeed, in such instances the patient will be better served by stopping all efforts other than taking a history, and

making a physical examination, which includes an examination of the ears, eyes, nose, and throat, as the present laboratory examinations so far as migraine is concerned stop at the beginning of the unknown.

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- 1 Buchanan, J. A.: The Abdominal Crises of Migraine. *Jour. Nerv. and Ment. Dis.*, 54:406, Nov., 1921.
- 2 *Ibid.*: Results of Surgery for Migraine. *Surg., Gyn. and Obst.*, 38:628-629, May, 1924.
- 3 *Ibid.*: Mendelianism of Migraine. *Med. Rec.*, 98:807, Nov. 13, 1920.

NATIONAL CHILD HEALTH MAY DAY

DR. FRANK J. MONAGHAN, Commissioner of Health, New York City, has announced the appointment of a committee to aid in the plans prepared for the celebration of National Child Health Day, on May first. Neighborhood houses, health centers and child welfare organizations, under a tentative plan thus far arranged, will be requested to participate by organizing health programs for their particular districts. Public, as well as parochial, schools, will take part in various events, with a view of making the day a memorable one. Large department stores will have child health window exhibits and food industries will display child health placards during the week.

Reports already at hand, indicate that hundreds of national organizations, representing millions of persons throughout the nation, have promised their hearty cooperation. Every state will observe the day. Cities and rural districts are united in this cause.

Last year, thousands of babies and young children were examined during the month of May, as a result of the impetus given to health supervision of children by May Day. Hospitals requested their staff physicians to devote practically their entire time, during a number of days in May, to the detection of physical defects in young children who visited the institutions for such health examinations. This year, we propose to effect a more elaborate program. Cooperation of all physicians, hospitals, clinics and dispensaries will be sought in conducting the examinations of children of pre-school age.—*Bulletin N. Y. City Department of Health*.

TUBERCULOSIS IN CHICAGO

On January 1st of this year there were 33,384 known cases of tuberculosis in Chicago and I suppose many more that were not known. The known cases alone represented approximately 10 per cent. of the city's population or just a little less than the entire population of Evanston. This comparison is made to give a good idea of Chicago's tuberculosis problem. It is a big one and we can well be proud of the fact that we have the lowest death rate from tuberculosis of any of the five largest cities in the country.—*Bulletin of the City of Chicago Municipal Tuberculosis Sanitarium*.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY

RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 11141

MEDICAL DEPARTMENT

A clergyman and civil engineer of seventy-seven entered February 27. His mother died of "hemorrhage from the mouth." He had rheumatic fever at fourteen, and was refused for the army at the time of the Civil War. At thirty-one he had "country fever." At forty-four while skating he fainted and had great palpitation of the heart. Since that time he had a number of attacks of weakness, dizziness and palpitation lasting a few hours, never laying him up for more than a day. He had always led a strenuous outdoor life and had done a great deal of walking. His habits were excellent.

In January, two months before admission, he began to be short of breath, especially after exertion, and found that his heart beat fast, jerkily and forcibly. He became noticeably weaker and had a little cough with dark brown sputum. At the end of January his legs and feet had become swollen. He would wake at two or three o'clock in the morning suffocated and weak and be obliged to sit up with his hands and arms resting on a table. In an hour or two he would feel relieved. He had some epigastric discomfort. He had vomited a few times. A month before admission he was in a hospital for nine days with considerable benefit.

Physical examination showed a slight, much emaciated old man with marked distension of the external jugular and the veins along the left clavicle and visible bounding of the carotid, brachial and femoral arteries. The left chest showed marked prominence in the precordial region. The mucous membranes were very pale. Pea-sized glands were palpable in the axillae and groins. The apex impulse of the heart was visible beating forcibly in the fifth and sixth spaces outside the nipple line six and a quarter inches to the left of midsternum, and in the third space to the left of the sternum. The impulse and dullness corresponded in the sixth space. The right border was at the sternal margin. The supra-cardiac dullness was not increased. The action was slightly irregular, chiefly in rhythm. The first sound at the apex was sharp. The second sound could be heard only about half way toward the base, not

at the apex. The pulmonic second sound was accentuated. Following the sharp first sound at the apex was a high-pitched musical systolic murmur extending well into diastole and transmitted to the axilla. In the third space to the left a harsh rough systolic was heard, and a loud blowing diastolic murmur transmitted upward to the second space to the right of the sternum, downward to the apex and into the axilla, where a to-and-fro murmur was heard distinctly. The pulses were slightly irregular, Corrigan. The arteries were palpable and tortuous. Sclerosed plates were easily felt. The systolic blood pressure was 135 to 145. The lungs showed slight dullness, diminished respiration and voice sounds, and fine moist râles at both bases posteriorly, rising higher on the right, and fine moist râles at the bases in front. In the right flank was dullness, not shifting. The liver dullness extended just below the costal margin, where the edge was felt. There was slight edema of the genitals and marked soft edema of the legs, ankles and feet. The venules on the legs were prominent. The pupils and knee-jerks were normal.

During the patient's stay in the hospital his temperature was subnormal, 98° to 94.6°, until the day of death, when it rose to 101.1°. The pulse was 61 to 94 with a terminal rise to 135. The respirations were 23 to 36. The daily output of urine was 10 to 28 ounces, the specific gravity 1.020 to 1.022. There was a slight trace of albumin at one of two examinations, rare pus cells at both, rare red cells at one. The blood was not remarkable.

The patient was comfortable except at night, when he tended to be rather delirious. At times he was very short of breath. March 7 he developed Cheyne-Stokes respiration. That night he gradually failed. His pulse grew rapid and weak. The next morning with the rise in temperature his lungs were full of moist râles. That morning he died.

DISCUSSION

BY DR. RICHARD C. CABOT

NOTES ON THE HISTORY

I am afraid this first line means that he followed first one profession and then the other. I should like to think that he did both. I have always thought that a clergyman should do something besides preach.

The statement about his mother's death is interesting. The possibilities that come to mind of course are consumption and aneurism. I do not know what else, unless it was purpura hemorrhagica with multiple hemorrhages.

He was refused for the army presumably on account of heart disease.

Does anyone know what "country fever" is? We hear of the feverish life of the cities, but we do not ordinarily hear of the feverish life of

the country, and whether this means malaria or some such thing I do not know.

His "fainting" was probably a heart failure in connection with the lesion that kept him from getting into the war.

The position described as a means of relief is a very common one in cardiac dyspnea.

His epigastric discomfort was presumably due to a congested liver.

This is obviously a cardiac case; I do not yet know of what type.

NOTES ON THE PHYSICAL EXAMINATION

Bounding arteries make us think of aortic regurgitation, but an arteriosclerotic such as at seventy-seven it is not improbable that he was can have a pulse so like the Corrigan felt in aortic regurgitation that it often deceives us. He is not likely to have any thyrotoxicosis, the other common cause of bounding arteries.

Prominence in the precordial region has nothing to do with heart disease. The old textbooks would make us think that it had. But I think the truth is that a large number of people have a prominence of one or the other side of the chest due to poor development, perhaps to rickets. This happens sometimes to coincide with cardiac disease, but I do not believe that cardiac disease itself ever affects the shape of the chest.

There is certainly enlargement of the heart.

We must change the wording of this description of the murmur. It is the wording of the record, but the record must be old. We have to say "a high-pitched musical systolic murmur and a diastolic murmur transmitted to the axilla." We have systolic and diastolic murmurs everywhere.

The Corrigan quality of the pulse goes with the bounding arteries which we spoke of before.

What we want to know is what the diastolic blood pressure was, and that they do not tell us.

There is edema of the lungs.

"Venules on the legs prominent" is of no importance that I know of.

The temperature is pretty low.

There is nothing here to indicate trouble with the kidney.

DIFFERENTIAL DIAGNOSIS

It is unusual to see a man dying at seventy-seven with a heart trouble obviously valvular. Most valvular disease, whether syphilitic or rheumatic, kills before seventy-seven. But I cannot see that we have a right to make any diagnosis except that of valvular disease.

There are two types or causes of aortic regurgitation—he certainly must be thought to have aortic regurgitation from the facts in the heart and in the pulse,—(1) syphilitic and (2) rheumatic. He is very old for a syphilitic aortitis. I have never seen a case at this age. I do not know that it does not occur, but I never saw it.

There is no history and no other evidence or suggestion of syphilis. On the other hand it is rare to have a rheumatic lesion lasting so long, as I have said, but not so rare, I think, as in syphilis, because syphilis is a severer lesion on the whole than rheumatism. So that we have to say, so far as I see, that he has aortic stenosis and regurgitation due to rheumatism. That is a comparatively uncommon lesion when occurring alone. Rheumatic disease hits the mitral valve more than three times as often as it hits the aortic. So I think it is a good guess that there is a rheumatic lesion on the mitral too, although we have not a single fact in the history to lead us to say so, unless it is the accentuated pulmonic second sound and the sharp first sound at the apex. Those signs go perfectly well with mitral stenosis, and I think it is a fair guess that he had it.

In any case it is a most remarkable circumstance that this man should have gone to his seventy-seventh year with no heart symptoms more than he has had. He did have at forty-four fainting and palpitation while skating, and later slight attacks, but had never been laid up with his heart until seventy-seven. That is very remarkable.

Outside the heart I do not see anything to say except general passive congestion.

MISS PAINTER: He was refused for the army on account of his heart.

DR. CABOT: That is an interesting point, showing that he had something that they heard as far back as 1861 I suppose. He was born in 1832. Fifty-eight years ago he had a lesion. That certainly is a very remarkable story, whatever it turns out. I still believe that the best we can say is rheumatic.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Aortic and mitral regurgitation.
Broken cardiac compensation.
Arteriosclerosis.
Hypertrophy and dilatation of the heart.

DR. RICHARD C. CABOT'S DIAGNOSIS

Aortic stenosis and regurgitation, rheumatic.
Probably mitral stenosis.

ANATOMICAL DIAGNOSIS

Arteriosclerosis.
Subacute glomerulonephritis with arteriosclerotic degeneration.
Fibrocereous endocarditis of the aortic valve and fibrous endocarditis of the mitral valve.
Hypertrophy and dilatation of the heart.
Thrombosis of the left auricular appendix.
Slight chronic passive congestion.
Papillary adenomata of the kidneys.
Teratoma of the kidney.
Infarct of the kidney.
General peritonitis, terminal.

Foci of obsolete tuberculosis in the apex of the left lung.
Chronic pleuritis.
Edema piae.
Scoliosis.

DR. RICHARDSON: The head in this case showed edema piae and some arteriosclerosis of the vessels of Willis but was otherwise negative. The brain weighed 1561 grams; a large brain with no lesions.

The peritoneal cavity showed an acute peritonitis, terminal. Terminal infections occur in any of the cavities, pleuritis, pericarditis, or peritonitis. In the streptococcus epidemics streptococcus peritonitis is common.

The gastro-intestinal tract was negative except for passive congestion.

The lungs showed chronic passive congestion and some obsolete tuberculosis in the apex of the left lung.

The heart weighed 576 grams—considerable hypertrophy. There was marked general arteriosclerosis. The valve measurements were for the tricuspid 14.5 cm., the pulmonary 9, the aortic 9.5, the mitral 13.5. These valve circumference are all increased. On the mitral valve there was a moderate amount of rather diffuse fibrous endocarditis and on the aortic a moderate amount of fibrous thickening with calcareous degeneration regarded as chronic endocarditis and of the rheumatic type. In the left auricular appendix there was a thrombus and in one kidney an infarct. In the lower pole of the right kidney there was a tumor, a small teratoma, and in each kidney several very small papillary adenomata. The kidneys otherwise showed a combination of conditions, subacute glomerulonephritis with some arteriosclerotic degeneration.

DR. CABOT: We are sometimes asked by a patient with rheumatic heart disease, "How long may I live with this?" We should put it down in the tablets of memory that we have here seen a necropsy of a man who had rheumatic fever at fourteen and presumably got his heart lesion then. He died at seventy-seven. He lived sixty-three years with that lesion. That is a point of value in the practice of medicine,—to be able to say truthfully to patients, "We have seen a case necropsied with a rheumatic heart lesion that lasted sixty-three years."

CASE 11142

CHILDREN'S MEDICAL DEPARTMENT

A three-months-old girl of Russian-Jewish parentage entered May 17. The complaint was fever of seven days' duration.

She was an only child and was born at eight months after prolonged labor. The delivery was normal and the child seemed normal at birth, weighing 6½ pounds. She was breast fed until

two weeks before admission. Supplementary feeding was started immediately after birth. The formula at admission was whole milk 20 ounces, water 20 ounces, dextrimaltose 4 table-spoonfuls, 10 feedings of 4 ounces each. She gained in weight steadily. Ten weeks before admission she had whooping cough lasting about five weeks.

Seven days before admission she began to run a fever, rising at night and coming down in the morning. She had some cough and rapid breathing. The condition persisted until admission.

Examination showed a well nourished child breathing rapidly. The head was square. There was marked craniotabes. The anterior fontanel admitted two fingers. The pharynx was slightly injected. The tonsils were moderately enlarged. There were palpable submaxillary and post-cervical glands. The neck was flexible. There was no Kernig or Brudzinski. The heart was rapid, otherwise normal. There was diminished resonance and prolonged respiration in the region of the right upper lobe. The abdomen was slightly distended, tympanitic. There was umbilical hernia. The extremities were somewhat rigid. The knee-jerks were equal.

The temperature was 101.9 to 106, the pulse 160 to 196, the respiration 80 to 120. The urine is not recorded. The hemoglobin was 60 per cent. May 18 the leucocytes were 16,200 to 16,000, the polynuclears 73 per cent., showing many types of young cells. The reds were 4,472,000, showing moderate variation in size and shape. Several possible nucleated reds were seen. The platelets appeared increased. May 20 another examiner found 46 per cent. polynuclears, 24 per cent. large lymphocytes, 30 per cent. small lymphocytes. The Pirquet was negative. The smear showed a few Gram-positive diplococci, not lancet shaped. The Wassermann was negative.

The morning after admission definite areas of consolidation were found in the right and left upper lobes at the angles of the scapulae. It was also noticed that the child held her arms and legs very rigid. There were no other signs of nerve hyperirritability. Nevertheless calcium chlorid therapy was started. During the day she had numerous convulsions characterized by twitching of the facial muscles, more on the left. Chloral hydrate grains v gave prompt relief. The next morning the condition was worse, though she did not have any convulsions. In the afternoon the fontanel was found to be bulging. There were no signs of meningeal irritation. A lumbar puncture gave 30 c.c. of cloudy colorless fluid under an initial pressure of over 550 mm. Albumin and globulin were strongly positive. There were 320 cells per cubic millimeter, 21 per cent. polynuclears, 7 per cent. large mononuclears, 72 per cent. lymphocytes. 20 c.c. of antimeningococcus serum was given after about 30 c.c. of spinal fluid had been withdrawn. The

fontanel was found to be level. Two hours later the child had projectile vomiting. Still later the fontanel was found to be bulging again. At midnight another lumbar puncture was done. May 20 the condition was very much worse. The child looked septic. The respiration was labored. The fontanel was level. Pending the report on the spinal fluid culture no more serum was given. The culture showed a profuse growth of streptococcus hemolyticus. That morning while feeding the child began to regurgitate through the nostrils and suddenly stopped breathing.

DISCUSSION

BY DR. FRITZ B. TALBOT

The early history of this child is perfectly normal except that she had just recovered from whooping cough before admission. The physical examination, however, showed a square head with marked craniotabes, which is suggestive evidence of rickets. She also had a suggestion of a nasopharyngitis and the respirations were high. Associated with this was an elevated white count with an increase in the polymorphonuclear cells. The very high respirations with the nasopharyngeal infection, of course, suggested pneumonia. This diagnosis became clear the following morning, when the characteristic signs of pneumonia appeared in both upper lobes.

Convulsions, which commenced that day, are a rare complication of pneumonia. Of the common complications one usually sees pleurisy followed sometimes by empyema, of the uncommon, pericarditis, endocarditis and meningitis. The latter is nearly always ushered in by repeated attacks of vomiting and convulsions. Peritonitis is also rare.

The next morning she did not have any convulsions. During the day, however, the fontanel became bulgy. It is surprising that there were no other signs of meningeal irritation. The spinal fluid showed the characteristic findings of meningitis. Without definite evidence that the disease is not cerebrospinal meningitis it is perfectly good use to administer antimeningitis serum until the diagnosis is clear. This was done without any untoward effect. The disease, however, progressed rapidly and another sign of meningitis, projectile vomiting, appeared. The report of the spinal fluid culture showed a profuse growth of streptococcus hemolyticus. The diagnosis, therefore, of a bronchopneumonia, streptococcus meningitis and rickets, was clear. The combination of pneumonia and streptococcus meningitis in my experience is rare. One would have suspected that a pneumococcus meningitis would be found. The pneumonia may, however, have been a streptococcus pneumonia. The pathological report can answer this question.

The question naturally arises how the infec-

tion entered the brain. The two most common ways in childhood are through the ear and by a blood borne infection. It would seem as if there were no recorded evidence of an ear infection and that the infection must have been blood borne.

The treatment of such a case as this is symptomatic. Unfortunately there is no specific treatment for such a case and the outcome is always fatal in infants.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Bronchopneumonia.
Meningitis.
Rickets.

DR. FRITZ B. TALBOT'S DIAGNOSIS

Bronchopneumonia.
Streptococcus meningitis.
Rickets.

ANATOMICAL DIAGNOSIS

Acute meningitis, streptococcus.
Otitis media, left.
Bronchopneumonia.

DR. RICHARDSON: The pia over the convexities from the frontal lobes back to the anterior margin of the occipital lobes was coated with pale yellowish exudate. The condition was more marked on the left than on the right. There was much cloudy fluid at the base of the brain and the pia along the base was thinly coated with exudate. This exudate extended out the fissures of Sylvius, best marked on the left side. There was a small amount of cloudy fluid and fibrin in the ventricles. The choroid plexuses were slightly swollen and coated with a slight amount of fibrinous exudate. Cover-glass from the exudate showed leucocytes and streptococci. The vessels of Willis and sinuses were negative. The right middle ear was negative. The left middle ear contained a small amount of purulent fluid. Cover-glass from it showed leucocytes and streptococci. The pineal and pituitary glands were negative. The brain weighed 750 grams. The tissue was rather wet but otherwise negative.

A small incision in the anterior thoracic wall was permitted, and through this the following conditions were made out. The pleural cavities contained no fluid and there were no pleural adhesions. The thymus and bronchial glands were negative. A piece of the lung was taken for microscopical examination. It showed some bronchopneumonia.* The pericardium was negative, and the heart outwardly was negative. Further examination was restricted.

A culture from the pial exudate showed streptococci. A frank case of acute streptococcus meningitis associated with some bronchopneumonia and left otitis media.

*The organism was not determined.

CASE 11143

SURGICAL DEPARTMENT

An Italian shipper of sixty-four entered December 6. He had been vomiting after meals for a week or two. He spoke English brokenly, so that the history was taken with some difficulty. It was however believed to be reliable. He had something which seems to have been malaria at seventeen, gonorrhea at twenty-seven and twenty-nine, diarrhea lasting nine days at fifty-two, and pain in the left knee-joint for a month and a half at fifty-three. His teeth were bad, but he had never gone to a dentist. His bowels were usually constipated. He now urinated at night and had possible hemorrhoids.

The records of the Out-Patient Department show that he came twelve years before the present admission complaining of continuous moderate pain in the epigastrium with some exacerbations. For a week he had had diarrhea with eight or nine movements daily, also frequency. On examination the abdomen and urine were negative. Four months later he came with a history of occasional diarrhea for two or three days alternating with constipation. Nine years later, two years before the present admission, he complained of cough of four weeks' duration, worse at night. He had night sweats and poor appetite. His bowels were constipated. Examination showed pyorrhea, a systolic murmur at the apex, a blood pressure of 175/95, negative urine. At a second visit a week later the symptoms were no better.

Examination in the Out-Patient Department ination showed pyorrhea, a systolic murmur at December 1, five days before admission, showed emphysematous breathing throughout the lungs, feeble heart sounds, a blood pressure of 170/90.

In the ward December 6 he gave a history of pain in the abdomen for four weeks and headache for a week after its onset. For three weeks he had had more or less projectile vomiting associated with abdominal distension three or four hours after meals. The vomitus was sour and black or green. He had been weak and had had black stools. November 27 the vomiting became more severe, so that December 1 he came to the Out-Patient Department of this hospital. The pain usually came at night, was diffuse and dull, more or less localized in the epigastrium and not severe, lasting half to three-quarters of an hour. After it he would sleep. For four weeks his appetite had been poor. A week before admission his bowels were constipated, moving only once in one or two days. For the last four days they had been regular. The stools were black or brownish and hard. He complained of a swelling in the rectum which sometimes obstructed the passage of stools. He urinated two or three times at night with slight pain. Lately he had had cough with a little whitish sputum. He had lost seventeen pounds during the past year, and felt weak.

Examination showed a pale, emaciated, gaugard man. The teeth were in very bad condition. The heart and lungs were normal. The blood pressure was 120/70. The artery walls felt somewhat sclerosed. The abdomen appeared somewhat swollen and tense in the region of the umbilicus. Just above and to the right of this was a hard oval mass the size of a small lemon moving with respiration. The liver and spleen were not felt. Rectal examination showed a rather hard irregular mass on the right side of the rectum.

Before operation the temperature and respirations were normal, the pulse 65 to 120, only twice above normal. The output of urine was 55 to 70 ounces on the two occasions recorded. The specific gravity was 1.020. The sediment showed 10 to 15 leucocytes per high power field and a rare hyalin cast. There was no albumin or sugar. The hemoglobin was 55 to 50 per cent., the leucocyte count 7,800, with 65 per cent. polynuclears. There were 2,848,000 reds, with slight variation in size and some achromia. A few blasts were seen. The platelets seemed to be increased. A Wassermann was negative. The non-protein nitrogen was 50 mgm. The stools were tarry or very dark brown and gave a very strongly positive guaiac at both of two examinations. Attempts at gastric analysis were unsuccessful because of vomiting of a black granular foul looking material with much mucus and no blood.

The patient had no vomiting in the hospital. December 11 operation was done. There was very little reaction from it, no vomiting or distension. December 14 the patient was up for a short time. The following day he suddenly developed consolidation at the right base with many râles. That day he died.

DISCUSSION

BY DR. EDWARD L. YOUNG, JR.

In spite of the fact that the history was supposed to be reliable, if it was taken with the difficulty described it is a handicap because in trouble with the gastro-intestinal tract an accurate history is of very great assistance. In fact one can almost make the diagnosis on the history alone in certain types of cases.

This occasional diarrhea alternating with constipation was at fifty-two, and that means that he was at the age where that symptom ought to be investigated. He may well have refused to have any further investigation than what they did in the Out-Patient Department, but it seems as if he should have had more.

There is a considerable drop in the systolic blood pressure in five days, between December 1 and 6.

Do they mean that that mass was outside the rectum, or is that just what they say?

MISS PAINTER: That is exactly what they say:

"Examination discloses a mass on the right side of the rectum."

DR. YOUNG: Because that might mean a mass in the wall of the rectum or a mass in the pelvis pressing against the rectum. In certain cases of metastatic carcinoma the pouch of Douglas is one of the early seats, and it would be possible to feel a mass just outside the rectum.

MISS PAINTER: From their diagnosis evidently they were not sure.

DR. YOUNG: Of course with a man who has had gonorrhea twice, ten or fifteen leucocytes per high power field does not mean anything more than a prostatitis.

The non-protein nitrogen is a little high.

I think it is fair to say that twelve years ago he did not have a carcinoma of the large bowel, even though he had symptoms of constipation and diarrhea intermittently for several months, because carcinoma of the large bowel almost certainly would not go for twelve years without making more trouble than he has had. This trouble is somewhere in his gastro-intestinal tract, and we have an inadequate history. What are the possibilities?

He might well have had a peptic ulcer, and one reason for his intermittent visits to the hospital would be the intermittent symptoms. The condition got better and then it got worse. We know that there could be constipation with peptic ulcer as well as with an obstruction in the large bowel.

If we are going to take the whole thing together it seems as though we must put it high up, because a colitis would be unlikely to have gone along this time without having more specific evidence of blood, pus, tenesmus, than he has had. I think it would be impossible. Malignancy would not have gone so long. We have no reason to consider tuberculosis. Moreover a tuberculous colitis, which is generally located around the cecum, is really a very rare condition and almost always secondary to pulmonary tuberculosis. It seems to me on the theory of chances alone the better bet is that he has had trouble with peptic ulcer and that this now has perhaps become malignant. Again I do not see how it is possible to assume malignancy in the stomach that has gone on this length of time, because the characteristic story in malignancy of the stomach is a shorter story than the story of ulcer.

Could it be anything else? We have of course to make a diagnosis that will fit in with blood escaping in the gastro-intestinal tract. He has no evidence of cirrhosis. I do not know anything else that we could possibly fit into the picture. So that I should think, on the story and on the examination as we have it, that the first bet is trouble around the pylorus. That is on the basis of one diagnosis only. Were there any X-rays taken?

MISS PAINTER: No.

DR. FREMONT-SMITH: I think that ulcer is probably the most reasonable diagnosis. I should like somehow to explain that mass in the rectum. Do you suppose he has a diverticulitis?

DR. YOUNG: I did not consider it because the cases of diverticulitis that I have seen have not had this sort of story over so long a period of time. They have had symptoms that have been very indefinite, but as we follow the case it is definitely located in the lower abdomen. I have not seen so much blood with it.

The reason I am trying to put malignancy here is because it seems likely that the pelvic tumor might be a metastasis. Of course it is possible that there are two areas of malignant growth in the intestinal tract. That does not occur very often, but it does occur.

How many follow my argument that this is malignant disease on the possible basis of an old ulcer? How many are against it?

A PHYSICIAN: I think with the mass in the rectum, with the considerable bleeding and with the vomitus—they had one specimen only of the vomitus, but it had no blood in it—I would rather think it was malignancy of the large intestine. He may have an old ulcer there too. But I think that is what carried him off.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Malignant disease of the stomach on the possible basis of an old ulcer.

PRE-OPERATIVE DIAGNOSIS

Carcinoma of the stomach.

OPERATION

Operation was attempted on this patient in spite of the advanced condition because of the fact that the pylorus seemed to be almost completely obstructed. Novocain. Right upper abdominal muscle splitting incision.—Because of the local anesthesia it was impossible to explore extensively. The omentum was found to contain many metastatic nodules. A large mass nearly completely obstructing the stomach was found at the pyloric end of the stomach. The growth extended rather far along the posterior wall of the stomach. The gastrohepatic omentum was filled with nodules and the omentum everywhere contained nodules of carcinoma. A large mass had also been felt by rectum. No further area of the abdomen was explored. The stomach was much dilated and distended, the wall thickened and edematous. Anterior gastro-enterostomy was done because of the impossibility of doing a posterior gastro-enterostomy. An entero-enterostomy just below the gastro-enterostomy was done at the same time.

FURTHER DISCUSSION

I do not know whether their line of argument was the same, but they end in the same way.

They are more emphatic in saying carcinoma.

If there were no X-rays and he had stopped vomiting, I do not follow their reasoning about almost complete obstruction.

In other words, they just took a desperate chance with a gastro-enterostomy to see if they could help the condition. I think it will be interesting to know whether Dr. Richardson will have any idea as to whether there is evidence of anything else than cancer, because it is a long time if we are going to make the whole thing hitch together. Twelve years ago he had pain in the epigastrium with diarrhea, and this persisted for several months. Of course it may have been a side-show and not connected with the final diagnosis.

The only comment here is that this is a good case to remember if anyone has the idea that ether is necessary for the so-called "ether pneumonia." Pneumonia will follow abdominal operations under local, I do not know whether the statistics tell us as often as with general, but certainly very commonly. I do not think there is anything more to say than that he died from the pneumonia which developed because of operation and extremely poor general condition.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of the pylorus of the stomach.

Bronchopneumonia.

Gastro-enterostomy for carcinoma of the stomach and entero-enterostomy.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Carcinoma of the pylorus of the stomach.

Pneumonia.

ANATOMICAL DIAGNOSIS

Adenocarcinoma of the stomach with metastases in the retroperitoneal lymph glands, the mesentery and the peritoneum.

Gastro-enterostomy.

Lobar and focal pneumonia.

Slight chronic pleuritis.

DR. RICHARDSON: There was an anterior gastro-enterostomy and an entero-enterostomy established and in good condition. There was no peritonitis. The terminal event was lobar and focal pneumonia.

In the region of the pylorus there was definite thickening and invasion of the wall by new growth tissue, with marked constriction of the pylorus. Extending from this growth there was an invasion of the peritoneum, the retroperitoneal tissues and the glands. Along the intestine in the mesentery and in three separate places there were masses of new growth. The intestine itself showed no tumors of any sort. These masses were metastases from the stomach cancer. The observation of the mass along the wall of the rectum was perfectly correct.

DR. YOUNG: It started from the outside?

DR. RICHARDSON: Yes. It was a metastasis from the stomach.

DR. YOUNG: It is not possible to say whether or not this developed on the basis of an old ulcer.

DR. RICHARDSON: I do not think it did. The character of the tumor was that which is associated with the so-called leather-bottle type of stomach. New growths of this sort seem to have a longer history than the other cases.

DR. YOUNG: Shouldn't you think that twelve years was long even for that?

DR. RICHARDSON: Yes, it is. But this leather-bottle type of new growth is small celled, infiltrates diffusely and takes some time before it thickens up the stomach wall so that it manifests its presence by obstruction.

DR. YOUNG: In other words, a history that was not reliable, because I think if we had got a more accurate story we should not have put so much emphasis on his story of years ago.

CURRENT LITERATURE

ABSTRACTORS

GERARDO M. BALBONI	TRACY MALLORY
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PULSE PRESSURE AND BASAL METABOLIC RATE IN THYROID CONDITIONS

DAVIES, H. W., and EASON, J. (*Quar. Jour. of Med.*, Oct., 1924), have made a careful study of these two factors, and find, in corroboration of the work of Read, that, in the absence of hypertension, there is a fairly close correlation between them, the P. P. (pulse pressure) rising and falling with the B. M. R. (basal metabolic rate) and vice versa. In individual cases considerable variation may be encountered, but, taking the average of a large number of observations, the correspondence is well marked, a progressive rise of pulse pressure coinciding with increase in the B. M. R. (A P. P. above 50 may be called increased.) The cases of myxedema showed a reduction in pulse pressure. The increase in P. P. is brought about in hyperthyroidism chiefly by a reduction in the diastolic pressure, partly by a moderate increase in systolic pressure. It should be noted that the P. P. was measured under basal conditions (at rest and after a 15 hours' fast); estimations under other conditions would be of little value as an indication of basal metabolism. It goes without saying that in aortic regurgitation, in which the diastolic pressure is always low, the increased P. P. is not accompanied by an increase of B. M. R.

The authors point out that there are several factors which would have a tendency to upset this interrelation. Thus anemia, by decreasing the viscosity of the blood, would increase P. P. through a lowering of the diastolic pressure, while cardiac insufficiency and septic conditions would have a disturbing influence of uncertain direction. It may be concluded

that repeated estimations of pulse pressure are of great value in following a case of thyroid disease, while in diagnosis the method is considerably inferior to the estimation of the B. M. R. The authors do not discuss the comparative merits of pulse pressure and pulse rate as indications of B. M. R.; perhaps the best way is to take both into consideration, using Read's formula,

$$B. M. R. = 0.683 (P. R. + 0.9 P. P.) - 71.5$$

[W. T.]

CHOLESTEROL IN THE BLOOD AND GALL STONES

Using a colorimetric method, CAMPBELL, J. M. H. (*Quar. Jour. of Med.*, Oct., 1924), estimated the cholesterol of the blood in a number of cases of gall stones and cholecystitis, as well as in other diseases and normal controls. Contrary to some of the preceding work, but in agreement with Denis and others, he found that in no case of gall stones or cholecystitis, provided that jaundice were absent, was there any increase in the blood cholesterol. In jaundice, diabetes and pregnancy, on the other hand, an increase was found. The conclusion is obvious that determinations of cholesterol have no diagnostic value in diseases of the gall bladder. From the theoretical point of view, his findings are opposed to the assumption that increased cholesterol in the blood and bile are an important factor in the formation of gall stones.

[W. T.]

THE ACUTE ABDOMEN

DEAVER, J. B. (*Surgery, Gynecology & Obstetrics*, Dec., 1924).

Deaver in a brief article gives the results of his very extensive experiences in acute abdominal conditions by summing up in short paragraphs the essential and sometimes unusual conditions to be found in the various types of acute abdomen, such as acute appendix, acute perforating peptic ulcer, acute cholecystitis, acute pancreatitis, etc.

[E. H. R.]

TREATMENT OF HYPERTENSION

KAHLER, from Chvostek's clinic at Vienna, describes (*Wien. Klin. Woch.*, Sept. 11, 1924) a new method for the treatment of arterial hypertension by the intra-venous injection of Lupinin, vegetable alkaloid of the Sparteum group. Such injection was followed in all cases in ten or fifteen minutes by fall of blood pressure or from fifteen to twenty mm. of mercury.

[R. M. G.]

The issue of *Wiener Klinische Wochenschrift* for Sept. 25, 1924, is published as a fest-schrift in honor of the eighty-eighth meeting of the Society of German Naturalists and Physicians at Innsbruck. There is a variety of articles on many subjects from the various University clinics at Innsbruck. HABERLANDT, from Brüche's Physiologic Institute, discusses atropin as a means of stimulating the sympathetic nerve endings in the heart.

[R. M. G.]

INTERNAL SECRETIONS IN PREGNANCY

SELLEHEIM, from his clinic at Halle, discusses (*Munch. Med. Woch.*, Sept. 19, 1924) the relations of mother and child on the basis of internal secretory association. He concludes that the two grow synchronously and synergetically from the common standpoint of vegetation, on the basis of an interchange of internal secretions through the placenta.

[R. M. G.]

ESTIMATION OF BLOOD SUGAR

BECHER and HERRMANN, from Volhard's medical clinic at Halle, describe (*Munch. Med. Woch.*, Oct. 17, 1924) a quick and simple method for the estimation of blood sugar. The determination rests on the reduction of alkaline, picric acid solution by dextrose, and is especially suited for blood sugar control in the treatment of diabetes in practice.

[R. M. G.]

CONGENITAL THYMIC CONSTITUTION

In 1914, SCHRIDDE, from the Pathologic Institute at Dortmund, made an early contribution on congenital thymo-lymphatic status. He now reports (*Munch. Med. Woch.*, Oct. 31, 1924) further investigations on this subject and tabulates a series of thymus weights ranging from seven to nineteen grams. He discusses the value of radiation in the treatment of this condition.

[R. M. G.]

RESPIRATION AND DEFICIENCY

HORNICKE, from Brun's medical clinic at Königsberg, (*Munch. Med. Woch.*, Nov. 7, 1924) tabulates and discusses the relations of posture and respiratory type to general efficiency, and finds that in general the respiratory type of the efficient corresponds to the theoretic demands of rational respiratory activity. The necessity for respiratory training is consequently obvious.

[R. M. G.]

DIAGNOSIS OF PROGRESSIVE PARALYSIS

SPATZ, from the Psychiatric and Nerve Clinic at Munich, discusses (*Munch. Med. Woch.*, Nov. 21, 1924) Ostertag's method for the rapid anatomic diagnosis of progressive paralysis by means of the iron reaction, and believes that it is a useful diagnostic aid deserving wider adoption.

[R. M. G.]

A NEW PYELOGRAPHIC MEDIUM

RAVICH, A. (*Jour. of Urology*, Nov., 1924). The author recommends the use of 20 per cent. neosilvol as a urographic medium for the following reasons: Ease of preparation; clear shadow cast on X-ray film; its germicidal and antiseptic qualities; its soothing and curative qualities; lack of toxicity even in the presence of hematuria.

[B. D. W.]

SACRAL NERVE BLOCK ANAESTHESIA

MEEKER, W. R., and SCHOLL, A. J. (*Annals of Surgery*, Nov., 1924).

These authors present a very interesting article of 31 pages on this rather important subject, and append a large bibliography. The article is of distinct value.

[E. H. R.]

THE INFLUENCE OF THE SYMPATHETIC NERVOUS SYSTEM IN THE GENESIS OF THE RIGIDITY OF STRIATED MUSCLE IN SPASTIC PARALYSIS

HUNTER, J. I., Sidney, Australia (*Surg., Gyn. and Obst.*, Dec., 1924).

This article, following the previous one by Royle, takes up a discussion of the same subject, also from an experimental point of view. He goes into greater detail and does not use clinical cases as illustrations. This article is followed by a very full bibliography.

[E. H. R.]

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Established in 1828

Published by The Massachusetts Medical Society under the jurisdiction of the following-named committee:

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Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 126 Massachusetts Ave.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The Boston Medical and Surgical Journal, 126 Massachusetts Ave., Boston, Mass.

MEETING OF THE COUNCIL OF THE AMERICAN MEDICAL ASSOCIATION ON MEDICAL EDUCATION AND HOSPITALS

THE past twenty-five years have been characterized by rapid changes in medical education, and the progress of the medical sciences has had an important part in the transformation which constituted the subject of the symposium at the recent meeting in Chicago of the Council on Medical Education and Hospitals of the American Medical Association.

The controlling idea as pointed out by the acting chairman, Dr. Wilbur, is the development of the school of medicine, too often proprietary in character, into a university department. This evolution, beginning over thirty years ago, and having in the early days notable manifestations at Harvard under Eliot and at Johns Hopkins under Gilman, is not yet complete. There were heard both in Chicago and, during the previous week, in Boston at the meeting of the Association of American Medical Colleges, pleas for greater freedom, for greater opportunity for the student to develop his own individuality, for

closer approximation to true university education.

The point of view has been emerging gradually that medical education is primarily education, and it is the projection of the academic spirit into medical schools that has been the transforming power in these years. The rather summary methods of disposing of the lower grade medical schools that showed little disposition to accept the new dispensation were associated with a determined effort to persist along the lines laid down by thoughtful students of the situation, and resulted in a rigidity of requirement from which another determined effort must be made to set medical education free. The extent to which acceptance of the higher standards prevails today shows remarkable progress in twenty-five years, although few schools now require as much for admission as did the highest at that time.

What are the obstacles to freedom? The most troublesome restrictions are legislative enactments, which sometimes present great difficulty in the way of change. Rules of other governing bodies, though perhaps just as restrictive, may be more easily modified, and it is here that the attack must be made first.

It is clear that the regulations of State Boards of Licensure and the character of their examinations have an important effect in determining the curriculum of the medical school as well as the required preparation for matriculation in a medical school. But as was pointed out by Metzger, in this mechanism the State Board, naturally a conservative body, acts as the balance wheel, while the medical college is the main spring.

As expressed by Metzger and others, there is a strong tendency to consider exactly what the examination for licensure is to determine, and to limit it to this specific purpose. Thus, it is not to determine adequacy of training in the premedical subjects, nor even in the fundamental medical sciences, except in so far as they may be applied to medicine. It was even suggested that the duties of the State Board, in so far as the determination of educational qualifications is concerned, might well be restricted to the careful scrutiny and supervision of the medical school. But according to Metzger's view the State Board cannot have much initiative.

The first move must come from the medical school, and here it has been made by introducing certain flexibilities in the curriculum (Pepper, Edsall, and others) and by more formal action on the part of the Association of American Medical Colleges. At the Boston meeting certain definite steps were taken in the direction of liberalization—not much—but a beginning. It is now to be seen what the State Boards will do.

Judging from the opinion expressed in Chicago they will meet the medical colleges at least half-way.

Billroth said half a century ago that the medical service in rural communities in Germany presented an acute situation, and doubtless there have been periods in this country when there were exacerbations of distress. General attention has been directed to the situation in the United States at the present time by the President of the American Medical Association, and the consensus of trustworthy opinion is that the situation is serious. It is also true that many defects, some economic, can be pointed out in the system of medical education. But Pusey has not shown that there is any correlation between these two phenomena.

Bailey points out that the rural situation is serious from the economic point of view; and Pearl confirmed the findings of Mayer and Harrison that the distribution of physicians is determined by economic factors, when they are trying to make a living, rather than by the time and effort the physician has to spend in getting his education. If the per capita wealth of a community goes up one hundred dollars, a new physician moves in, if it goes down one hundred dollars, a physician moves out.

Lyon, whose students investigated for themselves some of the "openings" in Minnesota and adjoining states, said that not all the vacancies as "town without a doctor, fine community" were bona fide, to the bitter disappointment of the young graduate.

In recent years there has been a great increase in the number of hospitals and the preponderance of open over closed hospitals has become more marked annually. The value of the closed hospital, especially in connection with a medical school, was not underestimated, but Goldwater and MacEachern particularly emphasized the educational opportunities of the open hospital. The hospital is important in the professional advancement of every physician. In community hospital organization the need of every physician for the hospital should be a controlling factor; the inferior doctor often needs the hospital influence more than does the better trained physician. There is a wide-spread ~~hunger for knowledge~~ in the medical profession, and the average of professional ability in the community may be considerably elevated by the hospital influence.

There is a growing sentiment in favor of a single standard of educational requirements for all those who practice the healing art, whatever application of their knowledge they may see fit to make in the treatment of disease. The spirit of the conference in Chicago was one of qualified satisfaction with what has been accomplished in the past twenty-five years, and, with full recognition of the difficulties ahead, of optimism as to still greater gains to be expected in the second quarter of the century.

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(Communications and questions addressed to the Clerk will be gladly received and cheerfully answered.)

A COMMUNICATION has been recently received from the secretary of a hospital staff regarding the treatment of eclampsia, with especial reference to Cesarean section. Discussion had arisen concerning the following points: (1) The treatment of toxemia before convulsions have occurred; (2) Treatment after convulsions have occurred; (3) Chances for the child under Cesarean section and under other methods of treatment.

The treatment of toxemia before convulsions is still purely empirical. The etiology of the condition has not yet been solved, and no one of the numerous theories advanced will explain all cases. While nephritis with permanent kidney damage unquestionably underlies a certain number of cases of toxemia it does not account for all. Toxemia in a pregnant patient cannot be definitely treated by removal of the cause, save indirectly when pregnancy is terminated.

The principles of treatment are chiefly three:

1. Careful observation. This includes particularly blood-pressure determinations and urinalyses, the former to be made daily, bi-daily, four-hourly or even two-hourly, according to the severity of the symptoms and the height of the blood-pressure when the toxemia is first discovered; the latter to be done at least every day.

2. General hygiene and dietary restrictions. The patient should be freed, so far as is possible, from mental and physical fatigue, and should be kept quietly at home, if necessary in charge of a competent nurse, or better, if frequent blood-pressure readings are required, in a hospital. She should be made to drink fluids freely, especially milk, water, and fruit juices, and should have her diet restricted to a low protein level by omitting meat, fish, eggs, nuts, beans, and peas. If marked albuminuria is present a strict milk diet is often indicated.

3. Elimination. The kidneys are kept active by means of a large fluid intake, and the skin by means of a daily warm bath. The bowels, which seem to be the chief channel through which the toxins of this condition are eliminated, should be freely opened. For this purpose the saline cathartics are best adapted, as they withdraw fluid from the tissues, and with the fluid the toxins. Magnesium sulphate should be given in doses of one ounce every hour until

free watery catharsis has been effected, after which the dose may be regulated at half an ounce every two, three, or four hours sufficient to produce ten or twelve watery movements per twenty-four hours.

Many cases of preëclampsic toxemia under a regime followed out along the above lines will show a progressive diminution of albumin in the urine down to complete disappearance, while the blood-pressure will gradually decline to its normal level. Other cases can only be held at the same level by this means, as the elimination seems only to equal and never to exceed the production of toxins. Still other cases grow worse despite the treatment, many of them very rapidly, and in such an event induction of labor is urgently called for in order to forestall the onset of convulsions.

The treatment of eclampsia is aimed to accomplish three objects:

1. To protect the patient's central nervous system from further irritation, of which her convulsions are a symptom. To this end she should be kept quiet in a secluded, preferably darkened, room, and all visitors save her immediate attendants should be rigorously excluded. During convulsions she should be prevented from biting her tongue if possible, and during coma care should be taken to prevent aspiration of mucus. Morphia should be given subcutaneously to full effect, e. g., a quarter of a grain repeated every hour until respirations drop to 10 per minute.

2. To continue elimination of toxins. A copious stomach lavage is of value, the wash to be repeated until the water returns clear, two ounces of saturated magnesium sulphate solution then to be left in. Similarly five gallon bowel irrigations with sodium bicarbonate solution or 5% glucose are very useful in clearing out the intestinal tract, and may be repeated if necessary. The withdrawal of blood by venesection either to the amount of 500 c.c. or until the patient's blood-pressure is reduced to 150 mm. systolic is of very great value as a rapid method of elimination.

3. To facilitate early delivery of the patient, when the convulsions are antepartum. Most eclampsies start in labor with little delay after the onset of convulsions, and labor is frequently rapid. In this connection the speed and facility of abdominal Cesarean section is attractive to many as the easiest way out of a difficult situation; its great drawback, however, is the high mortality associated with it under these conditions. The mortality of Cesarean section in eclampsia as reported by Bride for Manchester, England, from 1911 to 1920 was 66.6%; that reported by Holland for Great Britain and Ireland for the same period of time was 32%. The fact that Holland reported a concurrent fetal and infant mortality of 50% indicates that abdominal Cesarean in eclampsia is not a sure method of securing a living child. Reports

from all obstetric centres agree that the less done in the nature of cutting or traumatizing operations in cases of eclampsia the better the maternal prognosis. Stroganoff's method of extreme conservatism with the use of morphia and chloral, and the limitation of operative interference to the performance of low forceps now claims a maternal mortality of 9.8% and a fetal mortality of 18.5%. The Boston Lying-In Hospital treatment of eclampsia consists in the employment of the Stroganoff method with the insertion of a Voorhees bag if the onset of labor is not prompt.

The prognosis for the child of the eclamptic mother may be said to be best if delivery is effected by Cesarean, provided that other factors determining fetal mortality can be successfully ruled out. These factors are chiefly non-viability, prematurity, maternal toxemia, intrauterine asphyxia during the mother's convulsions, and the trauma of operative delivery. Therefore although abdominal Cesarean is indicated occasionally in eclampsia for the benefit of the child such an occasion must necessarily be rare. The Boston Lying-In records from 1916 through 1923 show 55 antepartum eclampsies with a total fetal mortality of 72.7% from all causes. Four Cesareans were done during this period for eclampsia; two babies were lost, one because it was definitely non-viable, the other because of the fact that the mother was admitted to the hospital bleeding and with a complete detachment of the normally implanted placenta. The fetal mortality was actually 50% but might reasonably be said to be nil in those cases where the baby was known in advance to have a chance. The maternal mortality was 50% also, the patient with the separated placenta dying of anuria six days postpartum, another in coma being delivered without anesthesia of a baby weighing 5 lb. 10 oz., which lived. This last case is the only one delivered in those eight years by Cesarean for the benefit of the baby.

To summarize:

Abdominal Cesarean is only very rarely the procedure of choice in antepartum eclampsia. In the occasional case it is indicated in the interests of the child, but its ease and rapidity of execution should never blind us to the fact that used routinely it is much more dangerous to the eclamptic patient than conservative treatment with morphia, quiet, and elimination, with or without induction of labor from below.

LEGISLATIVE NOTES

Senate 169. The bill of Edna Lawrence Spencer designed to provide protection of mothers and children during the maternity period has been given leave to withdraw.

House 367. This bill provides for the designation on the label of the ingredients of soft drinks. It may be given an adverse report by the committee.

House 778. The Chiropractic bill has also been given an adverse report.

MISCELLANY

CONVICTED OF PRACTICING MEDICINE WITHOUT BEING REGISTERED

WALTER H. ROLLINS was convicted of practicing medicine without state registration, by a trial before a jury in Judge Hayden's court, March 20, 1924.

FIFTY ACTIVE YEARS IN MEDICAL PRACTICE

ELIZA A. MOSHER, M.D.

OCCASIONALLY a man has a record of fifty years in the practice of medicine. This distinction has been achieved by a woman in the person of Dr. Eliza A. Mosher and is probably unique.

Michigan University, Vassar College, Wellesley, Mount Holyoke and Adelphi, together with fifteen societies, most of them medical, together with the *Medical Women's Journal* and the *Medical Review of Reviews*, the Borough of Brooklyn with the Chamber of Commerce and many prominent citizens of New York and other places united in a complimentary dinner to Dr. Mosher at the Hotel Roosevelt, March 25, 1925.

Dr. Mosher has had a long experience as lecturer in various educational institutions. She is the Editor in Chief of the *Women's Medical Journal*. She has been prominent in civic as well as medical affairs.

We present our compliments to Dr. Mosher. With her example women physicians may feel assured that medicine opens avenues of usefulness in abundance.

MORE ABOUT FEE SPLITTING

SINCE the publication of the correspondence relating to a form of fee splitting information continues to come in that a copy of the letter offering a reward for sending persons to a rest home for invalids has been sent to other physicians. In addition a prominent doctor reports that an optometrist has agreed to pay three dollars for patients sent for fitting glasses. If this unethical practice is common it might be well to ask for the enactment of a law to prevent this attempt to seduce the medical profession. Fortunately very few doctors will respond.

BETTER POST-MORTEM SERVICE

DR. H. E. ROBERTSON Rochester, Minn., is the author of a paper presented in *The Journal of Laboratory and Clinical Medicine*, Vol. X, No. 6, which should read by physicians. His arguments are cogent and appealing. If this paper is read there will be more post-mortem examinations.

ASSOCIATION OF BREATHING CAPACITY AND DELINQUENCY AMONG WOMEN

THERE is apparently an important connection between breathing capacity and delinquency among women.

Recent investigations by Dr. Frederick L. Hoffman, LL. D., consulting statistician of the Prudential Insurance Company of America, into the present day human physique, with a due regard to age, sex and race, has revealed among other interesting results the striking fact that normal women usually have a chest expansion about three centimeters greater than delinquents at corresponding ages.

"While delinquents apparently have a slightly better general physique than normal women, as indicated by a somewhat larger chest and abdominal circumference, their breathing power is distinctly less," says Dr. Hoffman. "And this vital inferiority," he adds, "may have an important bearing upon mental development, for otherwise physically delinquent women exceed rather than fall below the averages for the different bodily proportions as ascertained by painstaking measurements."

Dr. Hoffman's investigation included a large number of individuals and has covered a considerable period. In normal women at 30 years of age the chest expansion averages 11.2 centimeters against 9.8 for delinquents. At ages beyond this, the difference is still more marked, being 10.2 for normal women and 7.6 for delinquents. Expressed in inches the differences are:

Under 30—Normal women, the chest expansion is $4\frac{1}{2}$ inches; delinquent women 4 inches.

Over 30—Normal women, the expansion is 4 inches; delinquent women 3 inches.

Only in breathing capacity did the measurements disclose an inferiority among delinquents. Thus, says Dr. Hoffman, the abdomen, which is a fair index of nutrition, was 88 centimeters circumference for normal women under 30 years, while for delinquent women it was 90 centimeters. Among normal women over 30 the abdominal circumference was 94 centimeters against 93 among delinquents. Average weight under 30 was 125 pounds for normal women and 130 for delinquents; over 30 the corresponding weights were 142 and 135 pounds.

Incidentally Dr. Hoffman says he is decidedly of the opinion that the tendency toward increased weight with advancing years among American women is to be viewed with apprehension as indicative of premature senility and greater susceptibility to a variety of serious organic diseases.

The data from which he derived his findings and conclusions included more than 4,000 measurements of both sexes of Caucasians, Negroes, Caribs and Indians of North, Central and South America. These measurements were all made under uniform methods either by himself or under his direction through the coöperation of

health officers and physicians in charge of reformatories and correctional institutions.—*Prudential Service Bureau, Newark, New Jersey.*

DISTRICT OF COLUMBIA GETS DISEASE CONTROL LAW

AFTER five years' of legislative history the venereal disease control bill for the District of Columbia was signed by the President on February 26. In spite of the fact that the bill has been on the verge of enactment at several times in the past, it did not become law until the closing days of the last session of the 68th Congress, although every state in the Union has had some sort of a venereal disease control measure since 1921. The fact that sentiment for the Gilbert Bill persisted for so long a time in the face of repeated legislative delays goes to show that the need for such a measure was keenly felt by residents of the District.

Under the provisions of the law, the chief officer of every hospital, dispensary, sanatorium and penal institution must report to the health department cases of venereal disease as soon as they are discovered. The judges of the juvenile and criminal courts must report any persons appearing before them who are suspected of being venereally infected. Private physicians are required to make a similar report within ten days after a case has come under their control. The District law provides that these reports be kept confidential by the health officer and his agents. According to the Division of Venereal Diseases of the United States Public Health Service, all of the states now have regulations requiring such reporting of cases of venereal disease.

In common with the regulations of thirty-five states, the District act provides that prostitutes, keepers of disorderly houses and persons convicted of any sexual crime are presumed to be a source of infection and are subject to examination. The health officer is required to employ for the protection of public health all such regulatory measures as may be necessary to prevent the spread of these diseases. He is also required to use every available means to ascertain the existence of venereal disease and the source of the infection. Persons against whom there is no criminal charge, but who are reasonably suspected of being infected, may be examined by the health officer upon consent of the parties. If, however, such persons withhold consent, an examination may be ordered by the court. A violation of such an order by continued refusal is punishable as contempt of court. In forty-three of the states the health officer is given express power to quarantine persons known to be infected with venereal disease. Nine of these states go even further, allowing the officer to placard the premises under certain conditions.

Twenty-nine states have laws which prohibit the advertising of preparations for the treat-

ment of venereal disease in lay publications, or which prevent the sale of such medicine to a lay person except on the prescription of a licensed physician. A like clause exists in the District law. Nineteen states have found it advisable to regulate the employment of the venereally diseased, and in the District of Columbia the law prohibits persons suffering from venereal disease, in a form likely to be a source of infection to others, from being employed as barbers, masseurs, cooks, bakers or other producers or handlers of food or drink or from working in any other occupation in which the disease might endanger the public health.

Under the new law, it is compulsory upon physicians to advise their patients as to measures which they should take to prevent the spread of these diseases. They are also required to report all of the indigent cases which may come to their notice. The board of health is under obligation to take care of such cases and to see that they are given the proper treatment according to approved standards. Practically all of the states have some way of taking care of such indigent cases.—*U. S. P. H. S. Bulletin.*

SMALLPOX IN CONNECTICUT, 1924

THROUGH an error it was stated in the health bulletin last week that there had been 72 cases of smallpox in 1924. The correct number is exactly 100. Of these 5 died, giving a fatality rate for the State of 5 per cent. The vaccination history of these 100 cases is as follows:

	Cases	Deaths
Had smallpox 18 years ago	1	
Never successfully vaccinated	63	4
Vaccinated within 7 years	0	0
Vaccinated more than 7 years ago	18	1
History uncertain	3	
Case records not received	15	
	100	5

These figures indicate that the majority of both cases and deaths were never successfully vaccinated. The one death in the person who had been vaccinated previously was a woman aged 77 who had been vaccinated during childhood. The 18 cases with one death among persons who had been vaccinated more than 7 years ago emphasizes the need for repeated vaccination to keep up immunity which may be gradually lost after either a vaccination or an attack of smallpox.

MATERNITY AND INFANCY, GEORGIA

GEORGIA is carrying on a campaign to register and teach her midwives in order to make conditions safer for mothers and babies in that State. Dr. Joe P. Bowdoin, Director of the State Division of Child Hygiene, reports that one-third of the babies born in Georgia, nearly 23,000, are not attended by a physician. Over 4,000 midwives have already been registered.

THE MEDICAL CENTER OF NEW YORK CITY

THE work on the Medical Center of New York City, which was initiated through the combined efforts of the Columbia University and the Presbyterian Hospital in the City of New York, is making steady progress. The Joint Administrative Board reports that the excavations for the combined School and General Hospital Building is now advancing rapidly, and that contracts for the steel, brick, sand and gravel have been awarded and that work on the foundation will commence May first.

There have recently been two important additions to the Center. The Babies' Hospital and the Neurological Institute of New York have both signed agreements with the Joint Administrative Board and will receive land for the erection of their new institutions as a part of the Medical Center.

BOARD OF REGISTRATION IN MEDICINE

THE Board of Registration in Medicine will not hold an examination in September. A special examination will be given in May, however.

REMOVALS

DR. ERNEST L. HUNT has moved his home from 120 Lowell Street to Kenilworth Road.

DR. R. P. WATKINS is spending two weeks at Surgical Clinics in Chicago.

RECENT DEATHS

BRASSIL.—DR. TIMOTHY FRANCIS BRASSIL, a Fellow of the Massachusetts Medical Society, died at his home in Cambridge of angina pectoris, March 21, 1925, at the age of 50.

He was born in Cambridge, the son of the late Daniel and Ann Brassil, and was graduated from Tufts College Medical School in 1905. He had been prominently connected with the Elks. During the World War he was a major in the Medical Corps.

He is survived by his widow, two daughters and a son.

MAXWELL.—DR. CHARLES JAMES MAXWELL, a Fellow of the Massachusetts Medical Society, died at his home in Hinsdale, Berkshire County, June 4, 1924, of pulmonary tuberculosis, at the age of 39 years.

He was a graduate of the Baltimore Medical College in 1909 and joined the Massachusetts Medical Society in November, 1921, from Hinsdale.

BIRGE.—DR. ELLA FREEMAN BIRGE, wife of Dr. William S. Birge of Provincetown, died in that town of heart disease, July 26, 1923, at the age of 66.

She was born in West Barnstable, Mass., the daughter of Lemira Kendrick and Julia A. Crocker Kendrick. She was graduated from the College of Physicians and Surgeons, Boston, in 1891, and had practised otology, laryngology and rhinology with her husband. She had been a member of the Massachusetts Medical Society since 1894.

CORRESPONDENCE

IS THERE A TABETIC FACIES?

Mr. Editor:

In reading books or journal articles concerning tabes I have not chanced to find any description of a characteristic or suggestive facies; perhaps there is none.

In seeing a number of these patients, some known, from their being in surgical out-patient departments for some surgical cause or other, some unknown, seen wending their way to and from other hospital out-patient departments, certain signs strike one about the facial expression and look.

Males, frail, failing and fifty. The hair prematurely gray, particularly about the temples. The skin drawn tight over the face, particularly over the cheek bones; expression, not mask like, but a lack of expression. Color, a grayish, earthy look of the skin of the face, not the lemon yellowish of pernicious anemia, or the look of advanced cachexia from cancer.

I have found that a number of patients with such a facies showed on examination, and gave a history of, symptoms of tabes, where the gait was not characteristic.

Very truly yours,

WM. PEARCE COUES, M.D.

Brookline, March 19, 1925.

BOSTON CONSERVATION BUREAU

March 19, 1925.

Editor, *Boston Medical and Surgical Journal*:

In your March 5th number there is an editorial on "Ultra-Violet Radiation and Scurvy," in which it is stated that Jeannette H. Clark, of the School of Hygiene and Public Health of Johns Hopkins University, has recently proven that ultra-violet radiation is not of value in the treatment of scurvy. The report is interesting, but it seems to me that it is hardly necessary to prove this fact, because in the thousands of cases of scurvy which have been reported from time immemorial in shipwrecked mariners and others, these unfortunates never lacked the curative effect of the sun's direct rays—in fact, instead of preventing scurvy, these rays added to their torture.

Yours sincerely,

M. DOUGLAS FLATTERY.

LONDON LETTER

DEATH OF SIR CLIFFORD ALLBUTT, K.C.B.P.C., M.D., F.R.C.P., F.R.S., REGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE

At the advanced age of 88, Sir William Clifford Allbutt, Regius Professor of Physic in the University of Cambridge, passed away quietly in his sleep during the early morning of February 22. Up to the last he continued in vigorous work and seemed in his usual health. By his death one of the greatest figures of British medicine, and indeed of international medicine, and the most commanding personality perhaps of Cambridge, is taken away. As are so many of the British great men, and those of other countries, too, for that matter, Clifford Allbutt was a son of the manse. It will be remembered that the late Regius Professor of Medicine in Oxford University, Sir William Osler, was a Canadian son of the manse.

Thomas Clifford Allbutt, born in Dewsbury in 1836, was the son of the Reverend Thomas Allbutt, rector of a little parish in the rural county of Suffolk in the east of England. He went to Cains College, Cambridge, where he had a successful career, graduating

in arts in first class honors in the Natural Science Tripos. In 1860 he became a bachelor of medicine and began to practise in Leeds. He was soon appointed physician to the General Infirmary there. In 1868 he took his M.D. at Cambridge and quickly obtained a leading position among the consulting physicians of the north of England. Dr. Allbutt was admitted M.R.C.P. in 1878 and was elected a Fellow of the Royal College of Physicians in 1882. In 1889 he was doing a very large consulting practice, which involved a great deal of traveling, and was also actively engaged in original work on the pathology of the nervous system, tetanus and hydrophobia.

Beginning to find he was doing too much, he accepted a position of Commissioner in Lunacy, which he held up to 1892, when he was chosen to succeed Sir George Paget as Regius Professor of Physic in the University of Cambridge and in addition was made physician to Addenbroke's Hospital, the hospital of the County of Cambridgeshire, situated in the city of Cambridge. Among the other posts which he held subsequently were consulting physician to the Belgrave Hospital for Children, to the Mount Vernon Hospital for Consumption, and to King Edward VII's Sanatorium at Miehurst.

Sir Clifford, as he was usually known, was a distinguished and somewhat extensive writer. His literary style was polished and easy and he possessed a rare facility of diction. His writing was both logical and clear, and while his knowledge was deep, he had the gift of rendering it lucid instead of involving it in a maze of technical terms, the unfortunate wont of some medical writers. It was in 1881 that Allbutt tried his prentice hand at writing and published "The Ophthalmoscope in Medicine." He was one of the first, if not the first, to show the value of the ophthalmoscope in the diagnosis of the diseases of the nervous system, the kidneys and certain other general disorders.

During the years 1896-99 he edited his well-known "System of Medicine," of which the success was so marked that a new edition was at once demanded. Sir Humphry Rolleston assisted him in the preparation of the second edition. Among books that he wrote were "Science and Medieval Thought," "The Historical Relations of Medicine and Surgery," "Diseases of the Arteries and Angina Pectoris," while among the lectures he delivered were in 1884 the Goulstonian Lectures on Visceral Neuroses before the Royal College of Physicians. In 1885 he lectured on "Scrofula" and in 1896 gave the Lane Lectures on Diseases of the Heart.

It is owing to Allbutt's ingenuity that we have the present handy and accurate clinical thermometer. Until he thought out the now indispensable pocket companion of the medical practitioner the only thermometer capable of recording in a reliable way the variations of the body temperature in times of sickness was so large and yet so fragile that it was of little use except in hospital wards.

Although Allbutt was apparently fully engrossed with his professional occupations he yet found time for much public work. He was a member of the Council of the Royal Society, of which he served as vice-president in 1914-16; he held office as examiner in medicine to the Royal College of Physicians in London and to the University of Oxford, and was a member of a departmental committee of the Home Office on Trade Diseases. Probably there was no man who ever lived who was the recipient of more honors from scientific and learned bodies than Allbutt. They were so numerous as to be almost embarrassing, and the letters which he was entitled to place after his name would exhaust the alphabet. Among his honorary degrees were the D.S.C. of the Universities of Oxford, Cambridge, Victoria and Leeds; the LL.D. of Glasgow, McGill and Toronto Universities; the M.D. of Dublin University, the Fellowship of the Royal College of Physicians of Ireland, the Fellow-

ship of the Academy of Medicine of New York, an honorary member of the American Academy of Arts and Sciences, an honorary member of the American Association of Physicians, a Fellow of the Linnean Society and a Fellow of the Society of Antiquaries.

In 1914, when nearly 80 years of age, he was elected president of the British Medical Association, a position he held throughout the war. In 1920, at the close of his term of office, when the British Medical Association had its first meeting after the war, at Cambridge, the members of the association, in order to show their acknowledgment of the services of their venerable chief, presented him with his portrait. At that time age appeared to sit lightly upon him and he presided at the various meetings held in Cambridge with vigor. He took part actively in the controversies which arose as a result of the passage of the National Insurance Act, and insisted strenuously that the act was not intended only for the practice of "pill and potion" on a rule of thumb diagnosis, but rather to nourish and further a spirit of research into the cause of disease. He argued that the measure was not meant to encourage the nation to depend upon reparative medicine only, but to aid in the promotion of preventive medicine. He never ceased to voice his opinion that prevention of disease was of vastly greater importance than treatment and that the object of the Insurance Act should be regarded as pointing in this direction.

He was a far-seeing man and his views on the Insurance Act gave the key to Sir Clifford's professional career. Moreover, he was no believer in what has almost come to be an axiom of medicine in these days: that the stress and strain of modern life are the direct causes of nervous affections and mental disabilities. He said once: "As we become more and more self-conscious and our physicians more pitiful and communicative, we hear more and more of nervous diseases, and we are not, indeed, inwardly averse from the subtle flattery which hints to us that we are of more sensitive clay than our fellows. Every generation has its medical fad; what was 'liver' fifty years ago has become 'nerves' today. Again it should be borne in mind that the virtue of nerves is to be excitable: the more excitable the more efficient. Old age rarely enters by the nerves; whilst the general answer to those who prate about their over-educated and over-pressed boys and girls is 'fudge.'" And he practised what he preached.

Personally Sir Clifford was delightful, dignified, courteous, sweet-tempered and affable. Concealing his varied and extensive knowledge under an unassuming manner, he at the same time commanded respect and inspired love. He possessed in a large measure the saving grace of humor. His talk sparkled with wit and wisdom, and, as said before, as a writer on medical subjects, both for deep knowledge and literary distinction, he was unequalled by any of his contemporaries. It may be added that above all he was a great clinical teacher, and at the present time, when such teaching is lacking, Sir Clifford will leave a gap which it will be difficult to fill.

He will be long remembered as a great teacher and as one of nature's gentlemen.

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

DISEASES REPORTED FOR THE WEEK ENDING
FEBRUARY 28, 1925

Diseases	No. of Cases	Diseases	No. of Cases
Anterior poliomyelitis	2	Encephalitis lethargica	3
Anthrax	1	Epidemic cerebrospinal meningitis	2
Chickenpox	219	German measles	210
Diphtheria	119	Gonorrhea	70
Dog-bite requiring anti-rabic treatment	4	Influenza	61
		Measles	628

Mumps	63	Trachoma	4
Ophthalmia neonatorum	25	Tuberculosis, pulmonary	126
Pellagra	1	Tuberculosis, other forms	26
Pneumonia, lobar	165	Tuberculosis, hilum	2
Scarlet fever	338	Typhoid fever	3
Septic sore throat	2	Whooping cough	126
Syphilis	44		
Suppurative conjunctivitis	8		

DISEASES REPORTED FOR THE WEEK ENDING
MARCH 7, 1925

Diseases	No. of Cases	Diseases	No. of Cases
Anterior poliomyelitis	2	Ophthalmia neonatorum	32
Chickenpox	238	Pneumonia, lobar	215
Diphtheria	120	Scarlet fever	319
Dog-bite requiring anti-rabic treatment	4	Septic sore throat	4
Encephalitis lethargica	4	Syphilis	54
Epidemic cerebrospinal meningitis	2	Suppurative conjunctivitis	26
German measles	228	Trachoma	2
Gonorrhea	93	Tuberculosis, pulmonary	120
Hookworm	1	Tuberculosis, other forms	22
Influenza	65	Tuberculosis, hilum	37
Measles	599	Typhoid fever	5
Mumps	90	Whooping cough	198

DISEASES REPORTED FOR THE WEEK ENDING
MARCH 14, 1925

Anterior poliomyelitis	2	Pneumonia, lobar	166
Chickenpox	215	Scarlet fever	375
Diphtheria	125	Septic sore throat	6
Encephalitis lethargica	3	Syphilis	52
German measles	282	Suppurative conjunctivitis	20
Gonorrhea	117	Trachoma	2
Hookworm	1	Tuberculosis, pulmonary	166
Influenza	57	Tuberculosis, other forms	19
Measles	597	Tuberculosis, hilum	41
Mumps	140	Typhoid fever	8
Ophthalmia neonatorum	40	Whooping cough	130

CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING
FEBRUARY 14, 1925

(Including all cases reported before 11 A. M., Monday, February 16, 1925)

Diphtheria	Wallingford (B)	1
Fairfield County	Waterbury	4
Bridgeport	West Haven	1
Norwalk	Woodbridge	1
Hartford County	New London County	1
Berlin	Montville	1
Bristol	New London	1
Enfield		—
Hartford	State total	50
New Britain	Last week	56
Rocky Hill	The following diphtheria bacilli carriers were reported:	
Southington	1 Hartford	2
West Hartford	1 New Britain	1
Wethersfield	1 New London	1
Litchfield County	1 Plainville	1
North Canaan	1 Waterbury	1
Plymouth		
New Haven County	Scarlet Fever	
Derby	1 Fairfield County	
Meriden (C)	1 Bridgeport	25
New Haven		

Darien	1	Windham County	
Shelton	7	Brooklyn	1
Stamford (C)	13	Killingly	—
Stratford	2		
Hartford County		State total	68
Bristol	19	Last week	74
Hartford	10	Whooping Cough	
Manchester	6	Fairfield County	
New Britain	20	Bridgeport	1
Southington	1	Fairfield	1
West Hartford	5	Greenwich	1
Wethersfield	1	Stratford	1
Windsor Locks	5	Hartford County	
Litchfield County		Bristol	15
Litchfield	2	Hartford	16
Morris	1	Wethersfield	4
Thomaston	7	Middlesex County	
Middlesex County		Chester	5
Middletown (C)	2	New Haven County	
Middletown (T)	1	Hamden	10
Old Saybrook	1	New Haven	5
Portland	1	West Haven	1
New Haven County		New London County	
Ansonia	2	Montville	3
Beacon Falls	1	New London	2
Cheshire	1		
Derby	2	State total	65
Hamden	5	Last week	43
Meriden (C)	6	Typhoid Fever	
Milford	2	Fairfield County	
New Haven	26	Bridgeport	1
Wallingford (B)	1	Hartford County	
Waterbury	6	Berlin	1
West Haven	3	Farmington	1
New London County		Glastonbury	1
Grisswold	3	Manchester	2
Jewett City	1	New Haven County	
Norwich (C)	1	Wallingford (B)	1
Stonington	1	New London County	
Tolland County		Norwich (C)	—
Rockville	1		
Windham County		State total	8
Scotland	2	Last week	16
State total	194	Other Communicable Diseases	
Last week	201	Chickenpox	88

Measles	Encephalitis epid.	1
Fairfield County	German measles	45
Bridgeport	Influenza	21
Hartford County	Mumps	35
Southington	Paratyphoid fever	1
Middlesex County	Pneumonia (broncho)	67
Chester	Pneumonia (lobar)	62
East Hampton	Septic sore throat	7
Saybrook	Trichinosis	1
New Haven County	Tuberculosis (pul.)	22
New Haven	" (other forms)	1
New London County	Gonorrhea	9
New London	Syphilis	19

MORBIDITY REPORT FOR THE WEEK ENDING
FEBRUARY 28, 1925

(Including all cases reported before 11 A. M., Monday, March 2, 1925)

Diphtheria	Litchfield County	
Fairfield County	Cornwall	1
Bridgeport	Middlesex County	
Newtown	Cromwell	1
Norwalk	Middletown (C)	1
Stamford (C)	New Haven County	
Stratford	Ansonia	1
Hartford County	Beacon Falls	1
Bloomfield	Branford	2
Enfield	Hamden	1
Hartford	Wallingford (B)	3
New Britain	Waterbury	7

New London County		East Granby	1
New London	1	Enfield	1
Norwich (T)	1	Farmington	16
		Hartford	3
State total	45	New Britain	7
Last week	57	Litchfield County	1
The following diphtheria bacilli carriers were reported:		Goshen	1
Berlin	8	Watertown	1
Bristol	1	Middlesex County	19
Hamden	1	Durham	1
Hartford	8	East Hampton	1
New Haven	1	Saybrook	7
New London	7	New Haven County	5
Norwalk	2	Branford	1
Westport	1	Hamden	1
		New Haven	7
		Waterbury	2
		New London County	2
		Old Lyme	—
Scarlet Fever		State total	77
Fairfield County		Last week	45
Bethel	1	Whooping Cough	
Bridgeport	20	Fairfield County	1
Fairfield	2	Greenwich	1
Shelton	9	Hartford County	5
Stamford (C)	2	Bristol	5
Stamford (T)	2	Hartford	1
Stratford	2	Newington	1
Hartford County		West Hartford	1
Bloomfield	1	Litchfield County	1
Bristol	2	Washington	1
East Windsor	1	New Haven County	1
Hartford	8	Meriden (C)	1
Manchester	1	New Haven	4
New Britain	29	New London County	4
Newington	1	Groton (B)	4
Southington	1	New London	2
West Hartford	1	Old Lyme	—
Windsor Locks	1	State total	30
Litchfield County		Last week	44
Litchfield	3	Typhoid Fever	
Plymouth	3	Fairfield County	1
Thomaston	3	Bridgeport	1
Watertown	2	Hartford County	3
Middlesex County		Manchester	3
Durham	1	Litchfield County	1
East Hampton	2	New Hartford	1
Middletown (C)	2	New Haven County	1
New Haven County		New Haven	1
Ansonia	3	State total	6
Guilford	1	Last week	7
Hamden	1	Other Communicable Diseases	
Meriden (C)	2	Chickenpox	58
New Haven	26	Conjunctivitis inf.	1
Wallingford (B)	1	Ophthalmia neo.	1
Waterbury	5	German measles	58
West Haven	5	Influenza	22
New London County		Mumps	25
Groton (B)	1	Pneumonia (broncho)	30
Lebanon	1	Pneumonia (lobar)	63
New London	1	Septic sore throat	3
Norwich (C)	1	Trachoma	1
Windham County		Trichinosis	1
Plainfield	2	Tuberculosis (pul.)	26
Pomfret	1	" (other forms)	2
Putnam (C)	—	Gonorrhoea	22
		Syphilis	26
State total	165		
Last week	165		
Measles			
Fairfield County			
Bridgeport	3		
Hartford County			

MORBIDITY REPORT FOR THE WEEK ENDING

MARCH 7, 1925

(Including all cases reported before 11 A. M., Monday,

March 9, 1925)

Diphtheria	Monroe	1
Fairfield County	Newtown	1
Bridgeport	Norwalk	2

Stamford (C)	1	Windham County	
Stratford	1	Eastford	1
Hartford County		Killingly	1
Bristol	2	Pomfret	1
East Granby	1	Willimantic	6
Farmington	1		
Hartford	11	State total	153
Manchester	1	Last week	165
New Britain	7		
Simsbury	1	Measles	
West Hartford	1	Hartford County	
Windsor	1	East Windsor	1
Middlesex County		Farmington	20
Middletown (C)	2	Hartford	1
New Haven County		Middlesex County	
Branford	3	Chester	11
Hamden	2	East Hampton	5
Meriden (C)	4	Middletown (C)	1
Waterbury	6	Saybrook	9
West Haven	1	New Haven County	
Tolland County		Branford	40
Rockville	1	Hamden	2
Tolland	1	New Haven	8
Windham County		West Haven	1
Putnam (C)	1		
State total	60	State total	99
Last week	45	Last week	77
The following diphtheria bacilli carriers were reported:		Whooping Cough	
Branford	20	Fairfield County	
Bristol	4	Greenwich	4
Hartford	8	New Canaan	1
New London	2	Stamford (C)	3
West Hartford	2	Stratford	1
		Westport	1
		Hartford County	
		Bristol	6
		Enfield	1
		Hartford	7
		West Hartford	5
		Litchfield County	
		Litchfield	1
		Washington	3
		Middlesex County	
		Chester	6
		Portland	4
		New Haven County	
		Hamden	4
		Meriden (C)	5
		New Haven	14
		New London County	
		Groton (T)	2
		State total	68
		Last week	30
		Typhoid Fever	
		Hartford County	
		Enfield	1
		Litchfield County	
		Plymouth	1
		Middlesex County	
		Middletown (C)	2
		New Haven County	
		West Haven	1
		State total	5
		Last week	6
		Other Communicable Diseases	
		Chickenpox	44
		Conjunctivitis inf.	1
		German measles	44
		Influenza	5
		Mumps	85

Paratyphoid fever	1	Tuberculosis (pul.)	26
Pneumonia (broncho)	44	" (other forms)	5
Pneumonia (lobar)	48	Chancroid	1
Septic sore throat	4	Gonorrhea	25
Trachoma	1	Syphilis	52

NEWS ITEMS

STUDY OF THE PSYCHOSES OF THE NEGRO AND INDIAN

PROF. E. KRAEPELIN, Director of the Munich Research Institute for Mental Diseases, and Prof. F. Plant, Director of the Serological Department of the Institute, are now in America studying the psychoses of the negro and Indian from the standpoint of comparative psychiatry. They will spend some time at the Government Hospital in Washington—St. Elizabeth's.

AWARDED MEDAL

DR. KENNETH M. METCALFE, resident on the Children's Medical Service at the Massachusetts General Hospital, has recently been awarded the medal of the Massachusetts Humane Society for saving a woman from drowning in the Charles River last fall.

APPOINTMENT AT HARVARD

DR. H. C. TRIMBLE has resigned his position as assistant professor of chemistry at the University of North Dakota to become assistant professor of bio-chemistry at the Harvard Medical School.—*Science*.

NOTICE

MEMBERSHIP DUES

If your 1925 membership dues are still unpaid, this is the last issue of THE JOURNAL you will receive. If you are delinquent, you should see the Treasurer of your District Medical Society at once.

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.

REPORTS AND NOTICES OF MEETINGS

NORFOLK SOUTH DISTRICT MEDICAL SOCIETY, Meeting for Medical Improvements, Norfolk County Hospital, South Braintree, Thursday, April 2, 1925, at 12 noon; speaker, Dr. R. MacAusland. Subject, "The Stiff Joint and Its Treatment."

NEW ENGLAND PEDIATRIC SOCIETY

THE ninety-first meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, April 10, 1925, at 8:15 P. M.

The following papers will be read:

1. Results of Sulpharsphenamin Therapy in Congenital Syphilis, Philip H. Sylvester, M.D., Boston.
 2. Gastric Analysis in Newborn Infants, Alfred T. Shohl, M.D., New Haven, Conn.
- Light refreshments will be served after the meeting.

KENNETH D. BLACKFAN, M.D., *President*,
JOSEPH GARLAND, M.D., *Secretary*.

MASSACHUSETTS SOCIETY OF EXAMINING PHYSICIANS

ANNUAL MEETING, ELECTION OF OFFICERS, AND DINNER AT THE COPLEY PLAZA, WEDNESDAY, APRIL 15, 1925, 6:30 P. M.

Compulsory Automobile Insurance, Hon. Martin Hays, Chairman House Judiciary, Author of the Bill. Edward C. Stone, Esq., representing Insurance Companies' viewpoint. Malpractice Suits, James S. Stone, M.D., member Legislative Committee, Massachusetts Medical Society.

The Electrocardiograph in Diagnosis and Prognosis, Howard Sprague, M.D., Massachusetts General Hospital.

WILLIAM PEARCE COUES, M.D., *Secretary*.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

THE Middlesex East District Medical Society will have its next meeting at the Harvard Club of Boston on April 15th. Dr. T. Chittenden Hill will speak on the "Diagnosis and Treatment of Ano-rectal Affections."

NEW ENGLAND DERMATOLOGICAL SOCIETY

THE Annual meeting of The New England Dermatological Society will be held Wednesday, April 8th, in the Thorndike Memorial, Boston City Hospital, at 3:00 P. M. The regular annual dinner will follow at 6:45 in the Hotel Vendome.

C. M. CASSELBERRY, *Secretary*.

BOSTON HEALTH LEAGUE

THE regular monthly meeting of the Boston Health League will be held at the North End Health Unit, 41 North Margin Street, on Wednesday, April 8, 1925, at 4 p. m.

The subject, School Child Health, will be discussed by leaders in that field.

This is the fourth in a series of lectures planned by the Health League for this season, being preceded by talks on Health Units by Dr. Charles F. Wilinsky, on Prenatal and Post Natal Care by Dr. Robert DeNormandie and on Child Hygiene (infant and pre-school child)

by Dr. Richard Smith. It will be followed in May by a meeting on the Health of the Adult, taking up Health Education and Periodic Health Examinations.

This series of lectures when completed will have emphasized in sequence what may be considered a practical public health program.

BRISTOL SOUTH DISTRICT MEDICAL SOCIETY

NEXT session, annual meeting, May 7, at Fall River Public Library, 5 P. M.

Dr. Timothy Leary will read a paper on "Alcohol."

GEO. E. BORDEN,
Secretary and Treasurer.

PHYSIOLOGICAL Conference will be held Wednesday, April 8, in the Bowditch Library, Building C, Harvard Medical School, at 4 P. M. Title, Rate of Blood flow as determined by a new method. Speaker, Dr. Herman Blungart.

NEW ENGLAND SOCIETY OF PSYCHIATRY

On Wednesday, April 8, 1925, the regular spring meeting of the New England Society of Psychiatry will be held at the McLean Hospital, Waverley, Mass., as the guest of the Superintendent, Dr. Frederick H. Packard. An interesting program has been provided. Members arriving early will be given an opportunity to visit various departments of the hospital.

BOSTON MEDICAL HISTORY CLUB

MEETING MARCH 16, 1925

Dr. M. J. ROSENAU spoke informally on the subject of "Epidemiology in the Bible."

He said the Bible contained a vast amount of information on all phases of disease, especially on hygiene and sanitation. There were not only notes on the diagnosis and care of sick persons, but also facts of historical interest on fumigation, maternity and sex hygiene, marriage and many other subjects. He particularly spoke of an epidemic of bubonic plague, described in the First Book of Samuel, chapter 4-7. Although the disease, plague, is a very old one accurate knowledge of its causation and prevention are of very recent date. The disease is at the present time endemic in nearly all countries, and has the most widespread distribution of any of the preventative diseases. The etiological organism has only recently been discovered, along with the now known fact that the disease is always epizootic in rats before it becomes epidemic in man.

The Bible story deals with the history of the plague among the Philistines after their victory over the followers of Israel near Eben-ezer. The Israelites in despair got the ark of the cov-

enant of Jehovah from Shiloh and brought it back to camp. The ark, later captured by the Philistines, was taken to Ashdod where the epidemic began. The plague "destroyed them and smote them with tumors." The tumors, sometimes called emerods, were, in the opinion of Dr. Rosenau, "plague boils" or buboes. To rid themselves of the disease, the Philistines first moved the ark to Gath, then to Ekron and later to Beth-Shemesh. Plague followed in each town during the seven months the ark was in the country of the Philistines. In Beth-Shemesh over 50,000 died "and the men that died not were smitten with the tumors." As a trespass-offering golden images were made of the tumors and of mice (rats), showing that the connection had already been noted between rodents and this disease. The epidemic finally died out but so depleted were the ranks of the Philistines that the next battle with the Israelites resulted in an overwhelming victory for the Jews.

Dr. George H. Monks then read a paper on "The Museum of the Harvard Dental School." He described in some detail the various collections on exhibition in the Museum, especially those having to do with human and comparative anatomy and pathology; those illustrating the development of the dental art along its various lines; those showing injuries to the mouth and jaw, with the results of treatment, and incidentally many articles of historical value, some of which are of interest to the layman as well as to the dentist. He also showed a number of photographs illustrating his remarks, and referred to the excellent work being done at the Museum by its enthusiastic Curator, Dr. Adelbert Fernald.

Mr. Alfred Ela brought to the attention of the Club three new books on paleopathology and allied subjects.

MEETING OF HARVARD MEDICAL SOCIETY

THE Harvard Medical Society held its regular meeting at the Peter Bent Brigham Hospital on Tuesday evening, March 24th. Drs. Harvey Cushing and Percival Bailey addressed the meeting on the "Histological Classification of Gliomata and Its Prognostic Significance."

The speakers based their remarks on the study of a large series of cases of gliomata. The object of this study was to correlate the clinical findings with the pathological findings, so that a more definite prognosis could be given. In a total of more than one thousand cases of intra-cranial tumors, approximately forty-one per cent. were gliomata. In more than three hundred cases of this series of gliomata, preserved tissues were available for review and histological study.

As an introduction to the problem, Dr. Cushing discussed the clinical, surgical and patho-

logical aspects of a particular group of gliomata. These have been called neuroblastomas and neurocytomas in the past. Almost all of these are mid-cerebellar tumors in children under fifteen. The symptoms are those characteristic of cerebellar disturbance. These tumors are rapidly growing and run a course, on the average, of about six months, and frequently produce a sudden fatality. These often project down the spinal canal, making removal difficult. They appear easily nucleable, but always recur.

In most instances it is better to leave these tumors alone and treat by X-ray. Many believe that they are hopelessly malignant, but some cases, diagnosed as such, are still living after fifteen years. These tumors are extremely amenable to radio-therapy. Dr. Cushing demonstrated six cases in which life has been prolonged for a number of years by treatment by radiation.

These gliomata have a characteristic architecture, staining reaction and histological appearance. They are very cellular and full of mitoses. More recent methods of staining show glia fibrils in these, which do not stain by the ordinary methods. The intercellular spaces are filled with these fibrils that resemble embryonic glia, found at a certain stage of development in the histogenesis of the brain. The cells are not neuroblasts or neurocytes. They belong to a different line of genesis in the development of the central nervous system. They resemble an indifferent type of primitive spongioblast, which has a tendency to form glia cells rather than nerve cells. It would therefore be logical to attach the name spongioblastoma indifferens to this type of glioma.

Dr. Bailey presented the results of an extensive histo-pathological study of all available types of gliomata. This review was undertaken with a view to classifying these tumors, so that their outcome or prognosis might be predicted from the histological picture. By careful comparisons of the various types of tumor cells with those found in the normal histogenesis of the brain, Dr. Bailey was able to identify each new growth with some particular type of embryonic brain tissue. By use of the newer methods of staining, he has been able to find almost every type of embryonic brain-cell in the tumors. Many tumors are not made up entirely of one type of cell, but most of them tend to fall definitely into one class or another according to the predominating type of cell found in them.

Tumors representing less differentiated types of cells are more malignant. Patients, with gliomata consisting of cells of the less differentiated type, on the average, die sooner than those with gliomata representing more highly differentiated cells. Thus the histological classification of gliomata has an important bearing on prognosis.

Dr. Bailey illustrated his method of study

with lantern slides, showing the various types of tumor cells on which his classification was based.

SOCIETY MEETINGS

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 6, 1925. Annual meeting at Young Men's Christian Association Building, 40 Lawrence Street, Lawrence.

Franklin District Medical Society

The next meeting of the Franklin District Medical Society will be held on the second Tuesday in May.

Hampden District Medical Society

Meeting to be held on the third Tuesday in April.

Hampshire District Medical Society

The next meeting will be held the second Wednesday in May.

Middlesex East District Medical Society

Wednesday, April 15. Harvard Club.

Wednesday, May 13. Colonial Inn, North Reading.

Middlesex North District Medical Society

April 29, 1925.

Middlesex South District Medical Society

Winter Schedule.—The plans for winter meetings of the Society include the stated meeting in April, two hospital meetings, and five meetings to be held in conjunction with the Suffolk District Medical Society and the Boston Medical Library (two surgical, two medical, and one general).

Norfolk South District Medical Society

Meetings will be held the first Thursday of each month to May, inclusive, at 12 noon, at the Norfolk County Hospital, South Braintree.

Suffolk District Medical Society

April 29. Annual meeting. "Hypertension and Longevity," Dr. Harold M. Frost.

Worcester District Medical Society

April 9, 1925. Subject and speaker to be announced.

May 14, 1925. Annual meeting.

If you desire further information in regard to these meetings write to the Secretaries of the District Medical Societies (listed on page x of the Advertising Section). The Massachusetts Medical Society Directory contains their addresses.

NEW ENGLAND STATE MEDICAL SOCIETIES

The annual meetings of the New England State Medical Societies are scheduled as follows:

Connecticut State Medical Society—Bridgeport, May 20-21, 1925.

Maine Medical Association—Bar Harbor, June 23-25, 1925.

Massachusetts Medical Society—Boston, June 9-10, 1925.

New Hampshire Medical Society—Manchester, May 19-20, 1925.

Rhode Island Medical Society—Providence, June 4, 1925.

Vermont State Medical Society—St. Johnsbury, Oct. 15-16, 1925.

BOOK REVIEW

General Medicine. By GEORGE H. WEAVER, M.D., LAW-RASON BROWN, M.D., ROBERT B. PIERCE, A.M., M.D., BERTRAM W. SIPPY, M.D., and RALPH C. BROWN, B.S., M.D. Chicago: The Year Book Publishers. 1924.

This volume contains summaries of many articles on general medical topics published during 1924. The chief value of such a volume is to introduce the reader to articles later to be read in their entirety. Little can be learned from any compend itself.

In the reviewer's opinion, the plan of this little book, however, is faulty in that a comparatively large space is given up to articles criticised adversely by the editor himself. In an attempt to give such a condensed summary of the year's work in medicine it would seem to the reviewer preferable (this is done in certain British annuals) to take all the articles bearing upon a given subject and condense them into a critical review of the subject, with full references. The result is a connected story of the year's investigation and progress under each heading, instead of a number of summaries of articles, the conclusions of which are often in conflict. The space saved by the omission of certain articles or their mere mention might be devoted to a fuller summary of really significant pieces of work.